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THE AMERICAN ENGINEER

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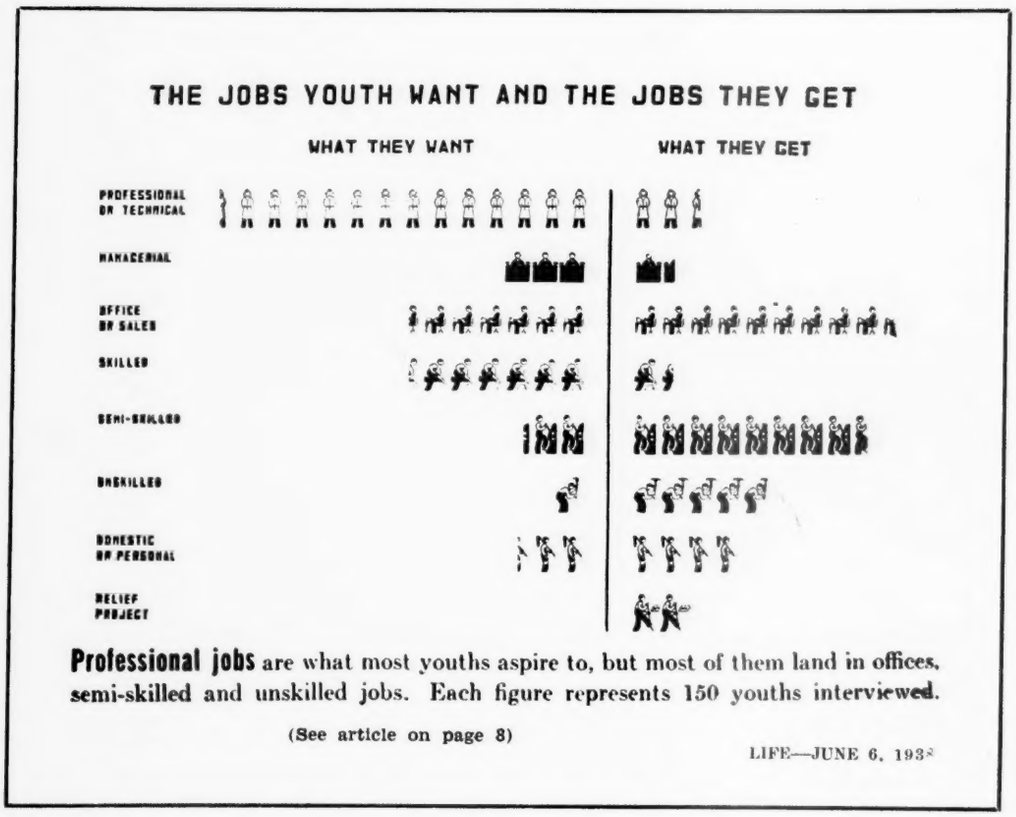

Professional jobs are what most youths aspire to, but most of them land in offices, semi-skilled and unskilled jobs. Each figure represents 150 youths interviewed.

(See article on page 8)

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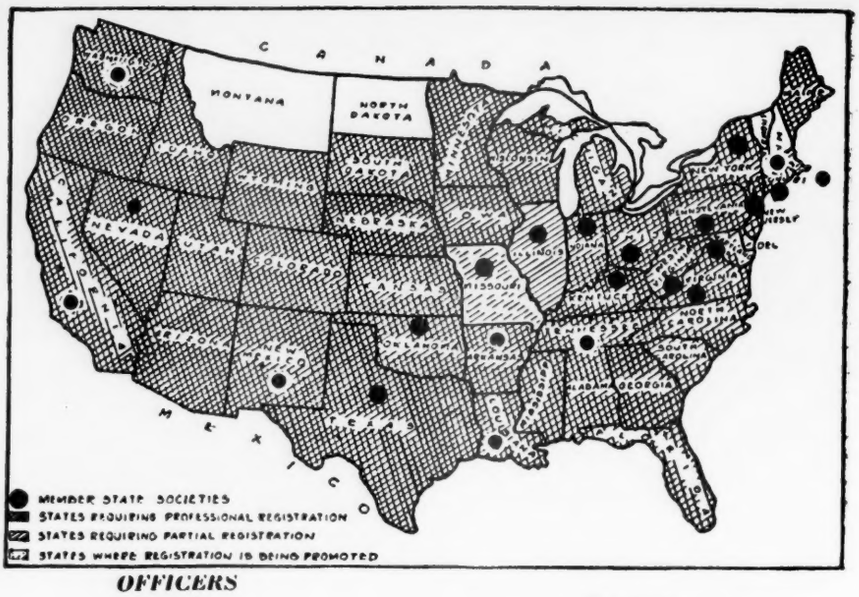

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THE AMERICAN ENGINEER

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EDITORIAL • • •

OUT IN THE OPEN

Across the Editor's desk in a year's time come all the varied problems confronting the professional movement. We wonder sometimes if we do not temporize with many of them —adopting an indecisive course—endeavoring to please two or more factions—yielding to current opinion. It is difficult to tie down social problems to a fixed position, but sometimes it is better to "grab the critter" by the throat and strangle him into submission.

Even Engineers, fact conscious though they be, are inclined to discuss real, live tangible social problems in the abstract rather than dig down to the basic facts and attack the fundamentals. We let issues creep upon us and then suddenly discover their importance and fight vigorously, but with our backs to the wall.

A New Year's beginning is fitting time for retrospect, analysis and plan.

The National Society of Professional Engineers begins 1939 with a chief officer, its President, selected from the more central part of the nation—certainly not from the "conservative east." Will he bring to us a viewpoint more aggressive than we have followed through more formative years?

What of our organization? Shall we receive more leadership from national officers and directors? Shall activity programs be formulated and suggested to the state groups? Our state autonomy must be jealously guarded, but some of our younger state groups are without a unifying program.

What of our finance? Shall there be a firmer policy of state collection of dues—with regular periodic flow to national headquarters? Shall national dues be increased? Shall state societies be encouraged to have at least one continuing salaried officer who will devote time and energy to internal organization and progress?

What of THE AMERICAN ENGINEER? Shall it continue in its present form, dependent almost solely upon membership dues for its life? Or shall it go streamlined and commercial? Can it be made a source of revenue? Do we agree with its editorial policy?

What of unions? Will employee engineers be split into a different classification than employer engineers? Can the professional society become strong enough to more quickly bring security to its members than through union affiliation?

What of the future engineers? Are we doing our share toward properly encouraging young men to have the urge to become professional engineers?

What of our attitude toward similar professional movements? Are we going to proceed on the theory that ours is the only method by which our professional interest can be advanced, or are we going to give credit to other agencies for their efforts; prove to them there must eventually be one strong national group; prove to them we do not have selfish or ulterior motives; that their qualified members may safely join with us without impairing their own technical group strength—in fact, that most of us will always cling jealously to our technical society affiliation?

What of our relation with the architectural professional, where thin lines divide our fields at times? Are we going to "buck" the architectural field because our registration laws are not so clearly drawn as yet? Or are we going to attempt to remain definitely within our own field as ethics and judgment direct, and cooperate within the states with the architectural profession to keep each in its respective area?

These and other problems confront us for 1939. Let us stand up and fight them cleanly and vigorously—for we do occupy a very definite place in society and in the economic system, which no other group can fill or usurp.

We are a necessity, even though we must fight to prove it!

ROBERT HALL CRAIG

Presenting Perry T. Ford, New President

of the National Society of Professional Engineers

By **G. F. RUDISILL, Editor, Engineering Age**

Perry T. Ford

In his boyhood days, attending country school, he had a flair for mathematics; today he is the head of a national engineering group. That is the story of Perry T. Ford, Columbus, Ohio, who was elected President of the National Society of Professional Engineers at its annual convention at Pittsburgh in October. Mr. Ford is one of Ohio's best known engineers.

Serving as vice-president of the National Society during the past two years under the administration of Arthur B. Sheridan, New York City, Mr. Ford was unanimously chosen by the nominating committee to head the engineering society during 1939. He has been secretary of the Ohio State Board of Registration for Professional Engineers and Surveyors since the Registration Act passed in 1933. He served as Vice-President of the National State Boards of Engineering Examiners in 1935, President of the Ohio Society of Professional Engineers in 1937, and is the founder of Engineering Age, a monthly magazine and digest devoted to the betterment of engineering and expansion of the engineering movement.

Mr. Ford is a native of Putnam County where he started his educational training in rural school and where he was regarded as a "good scholar," always proficient in his classes, but arithmetic and history appealed to him most. It might likewise be said he also enjoyed skating, baseball, and hunting. His hobby is archery in which he holds a record as a "crack shot." Early in his youth he decided upon an engineering career. After finishing grade school, he took special summer work at Kalida high school and completed his academic training at Lima College and Tri-State College. Later he wsa teacher, superintendent of high schools, practiced engineering during summer months and served as Putnam County engineer. He was granted the degree of C. E. at Ohio Northern University, Ada, Ohio, and Dr. of Engineers at Tri-State College, Angola, Indiana.

Always ambitious and making good in every job, as a youngster he worked in the saw mill, tile works, stone quarry. After being graduated from college in 1913 he left the farm and he now resides with his family in Columbus.

He and B. F. Fairless, now president of the U. S. Steel Corporation, were chums at Ohio Northern and often one would go home for the night with the other to study their lessons, "plan" a baseball game or "dream" of the future years. The paths to prominence of Ben and Perry were in many ways similar and to each other today as they get together they are the "best of friends."

After serving as county engineer four years Mr. Ford handled Federal Aid projects in his county for the State Highway Department, was made division engineer in 1920 and later was chief engineer with the Pan-American Engineering Company, Washington, D. C., and a member of the Board of Directors of the Wheeling Metal and Manufacturing Company. For a time he served as consulting engineer in Louisville, Ky. and Columbus, O. Following enactment of the Drainage Codifying Law in 1916 he was appointed engineer member of the Codifying Commission which drafted the state drainage code, and because of a splendid service on the commission and in preparing the commission's report, Mr. Ford is known among engineers of Ohio as "father of the drainage code."

Perry was the youngest of nineteen children, all born and reared on the Ford homestead near Rushmore in Putnam County. His father acquired the 120 acre farm from the government in 1848 under the administration of President Zachary Taylor. The farm is now owned by Perry, who acquired it because, he states, "he wants to hold the old homestead in the Ford name."

Mr. Ford's recognized ability and outstanding contributions to the cause of engineering in his state and the nation were reasons given by the nominating committee in unanimously choosing him as president of the National Society of Professional Engineers. On accepting the honor he said, "Engineers must realize the value of securing public recognition of their profession, which has very largely been accomplished, through vigorous concentrated effort, in the enactment of engineering registration acts in forty of the states. This is but one of many splendid achievements of the national and state groups, and furnishes a definite reason why all engineers should be willing to cooperate with and support the National Society of Professional Engineers." Concerning a present-day national situation, Mr. Ford predicted, "We confidently expect the time will come when the engineer will be an influential factor in solving the problems now confronting capital and labor."

NATIONAL SOCIETY NEWS

"HERE AND THERE"

N. S. P. E. NEWS

By W. S. CONLON, *National Secretary*

January 7, 1939.

This paper which we believe contains food for thought as well as ammunition for action will come to the State and National officers prior to publication in the AMERICAN ENGINEER as occasion warrants.

There are several items which should receive the immediate attention of your committees:

LEGISLATION

City and Regional Planning

is professional engineering! Your attention is directed to the fact that the California State Board of Registration for Civil Engineers incorporated in their "Rules and Regulations," effective July 1, 1937, a ruling that city and regional planning is professional engineering! We quote herewith from Rule V, Civil Engineering:

"The term 'civil engineering' shall mean that branch of professional engineering which deals with any or all of the following studies and/or activities—

The economics of, the use and design of, materials of construction and the determination of their physical qualities;

The supervision of the construction of engineering structures;

The investigation of the laws, phenomena and forces of nature; appraisals or valuations.

in connection with fixed works for

Irrigation, drainage, water power, water supply, flood control, inland waterways, harbors, municipal improvements, railroads, highways, tunnels, airports and airways, purification of water, sewerage, refuse disposal, foundations, frames and homogeneous structures, buildings or bridges.

"Said term shall include city and regional planning in so far as any of the above features are concerned therein, and geodetic, cadastral, municipal and topographic surveying, but nothing in this Act contained shall be construed to repeal, alter or modify that certain Act entitled "An Act* to define the duties of and to license land surveyors, and to repeal an Act entitled 'An Act to define the duties of and to license land surveyors,' approved March 31, 1891," approved March 16, 1907."

Why not have your Legislative Committee check with your State Board and lend moral support and any other assistance required to make this effective in your state? This is very important and should receive immediate attention of every State Society. Those states promoting professional engineers license laws should include city and regional planning in their proposed bills. The majority of planning agencies are composed of non-engineers and if we do not take action to correct this condition, we are failing to police our own profession. The public at large does not know this condition exists and incidentally has every right to expect the engineering profession to put its house in order.

Don't forget to give this to your Legislative Committee for immediate action.

Taxes and Assessments by Licensed Professional Engineers and Architects—

The valuation and appraisal of properties are engineering functions. What are the qualifications of the tax assessors in your community? Are there any engineers on your Boards of Finance, Common Councils, or other boards or commissions having to do with service to your local community or state? If so, why not advise this office so that we may quote such excellent examples as the following:

The Charter of the City of Syracuse, N. Y., adopted in 1935, Art. XIX, THE CITY SERVICE Sec. 312, Qualifications, pages 68 and 69, specifies as follows:

"The Commissioner of Assessment shall have been a resident of the City of Syracuse for at least two years and in addition (a) shall be a *licensed engineer or architect* of this state and shall have had at least three years practical experience in duties involving substantially and directly the work of real estate appraisal or valuation or the work of construction engineering or architecture; or (b) shall have had at least six years practical experience in like duties; or (c) shall have had at least five years experience as deputy commissioner of assessment or deputy assessor in Syracuse."

Taxes and Assessments by Licensed Professional Engineers and Architects (continued)

Syracuse, N. Y. Charter (continued)

"The Deputy Commissioners of Assessment shall have been residents of Syracuse for at least two years and shall be (a) *licensed engineers or architects* of this state and shall have had at least three years practical experience in like duties as above in the field of real estate appraisal or valuation, or construction engineering or architecture; or (b) shall have had at least six years practical experience in like duties; or (c) shall have had at least three years experience as assessor or deputy assessor or an equivalent position in Syracuse.

"The Deputy Assessors shall be *licensed engineers or architects* or (b) shall have had at least three years practical experience as above in the field of real estate valuation or of construction engineering or architecture or (c) shall have served in a responsible position in the Department of Assessment of Syracuse."

PUBLIC SERVICE

From a city in Florida comes the news that because the "budget is off balance" the County Commissioners vote to order net $155 a month in pay cuts to seven persons in the engineering department, effective January 1st. Doubtlessly the community will suffer because of the lack of a strong State Society of Professional Engineers. Apparently the organized professions and trades were not cut—reason very simple—they were organized!

The Indiana Society of Professional Engineers at their Convention in December recorded excellent progressive action, and from the Indiana press comes these headlines:

"ENGINEERS BACK MANAGER LAW" (for City Manager Government)

Incidentally, do you know that the majority of City Managers are qualified Engineers?

"ENGINEERS BACK MERIT SYSTEM"

The Indiana Society is rendering real service to their state and warrants the respect and admiration of all those citizens interested in efficient management of their public affairs.

Ohio Press (Cincinnati) quotes Engr. E. N. Waldvogel, now Councilman, who served three terms as State Senator, the father of the first professional engineers license law in Ohio, as follows:

"Waldvogel indicated that his experience in City Council had strengthened his conviction that the part played by engineers in public affairs made it mandatory that their profession be governed strictly to keep it on a high ethical plane."

Are there engineers in your local Council or State Legislature? If so, will you please send their names to N.S.P.E. Headquarters? Let's all pull together, we'll get there a lot faster.

*Now superseded by "An Act to Regulate Land Surveying ...." Ch. 506, Stat. of 1933.

New Director of the National Society of Professional Engineers Is Chosen From New York State

Announcement has been made of the appointment of Irving Hochstadter to represent the New York State Society of Professional Engineers as National Director. Mr. Hochstadter's selection was made by letter ballot submitted to the Board of Directors of the N. Y. State Society. It was a unanimous decision.

Following is a brief record of Mr. Hochstadter's background.

Irving Hochstadter

EDUCATION

Graduate Horace Mann High School—1905

Graduate Columbia University, School of Mines, Engineering & Chemistry—1909

Also studied abroad.

EXPERIENCE

President—HOCHSTADTER LABORATORIES, INC.—1909 to Date

President—STILLMAN & VAN SICLEN, INC.—1918 to Date

The HOCHSTADTER LABORATORIES, INC., are a Professional Service Corporation, who render services consisting of general Chemical Analyses, investigations and Consultations in the Chemical Industries.

STILLMAN & VAN SICLEN, INC., who are Chemical and Testing Engineers, have specialized in the testing of all types of Building and Highway Construction Materials. They serve the Chemical Engineering field in general and especially in fields covering Asphalt and Concrete Pavement Construction, Sewage and Disposal Plants, Water Supply Systems, etc.

Both Corporations, from time to time are retained by various industries for the purpose of bettering products, providing an outlet for waste products and for the purpose of introducing a technical control of plant and processes.

The writer is Technical Director and Executive Head of both the above mentioned Corporations in all of their major projects.

TECHNICAL AFFILIATIONS

MEMBER—American Chemical Society

FELLOW—American Public Health Association

FELLOW—American Institute of Chemists

FELLOW—American Institute of Chemical Engineers

MEMBER—Society Chemical Industry of London

MEMBER—American Public Works Association

MEMBER—American Society for Testing Materials

LICENSED PROFESSIONAL ENGINEER—States of New York and New Jersey

MEMBER—North Atlantic States Highway Officials Ass'n.

MEMBER—International Society for Testing Materials

MEMBER—N. Y. State Society of Professional Engineers

MEMBER and DIRECTOR—Nassau County Chapter, N. Y. State Society of Professional Engineers

MEMBER—N. J. Association of Professional Engineers & Land Surveyors

MEMBER—Chemists' Club, New York City.

MEMBER and DIRECTOR—Inwood Country Club, New York City.

MEMBER—Sigma Nu National Fraternity

MEMBER—Phi Lambda Upsilon Honorary Fraternity

(NOTE: Member of the N. J. Association of Professional Engineers & Land Surveyors since its inception; Member of the N. Y. State Society of Professional Engineers since its inception, and Director of same for over twelve years.)

PERSONAL

Age 51—Married—Two Married Daughters (One Granddaughter).

Residence—No. 1255 Far Rockaway Blvd., Far Rockaway, N. Y.

HOBBY—GOLF.

A Victory in the Cause of Registration in Engineering

The Pittsburgh Chapter of the Pennsylvania Society of Professional Engineers recently filed an information against J. Fred Triggs or J. Frederick Triggs, appointed Chief Engineer of the City Planning Commission of Pittsburgh, as violating the Registration Act. They also filed a Bill of Complaint in Equity restraining him from calling himself an "engineer" or holding the position of "Chief Engineer" of the Planning Commission.

Efforts were made to block both of these petitions on the grounds of "no jurisdiction" and that the complainants had no legal rights. The preliminary objections were dismissed. It was also agreed in open court to drop the criminal prosecution and proceed on the Bill in Equity to which an answer was filed. The answer alleged that the defendant was not practicing engineering, and the plans to which he signed his name were merely schematic and were not engineering plans. Samuel I. Sachs, chairman of legislation of the National Society of Professional Engineers, and national director of the Pennsylvania Society, was called to Pittsburgh to attend the trial which was held December 14, 1938.

Testimony was deducted on behalf of the complainant and everyone was co-operative. Engineer John F. Laboon, Director of Public Works in Pittsburgh, and Engineer Joseph E. Burke, District Engineer, State Highway Department and a member of the City Planning Commission, both testified and stated that, in their opinion, the work which Triggs was doing was engineering.

Judge McNaugher, stated that since sufficient information had been testified to, and a prima facie case was made out, he suggested that the parties get together. After much discussion, he suggested a form of consent decree to which both parties agree, and the decree following is the final one entered by the court and accepted by both parties. Being a consent decree, there is no appeal and the matter is finally ended.

In the opinion of Engineer Sachs, this case finally fixes the principle that no one can occupy a responsible position in the employ of a City, County or State which involves engineering, unless that party is registered. This, of course, will prevent many political appointments which have been extremely objectionable in the past to the engineering profession.

IN THE COURT OF COMMON PLEAS OF ALLEGHENY COUNTY, PENNSYLVANIA

BENJAMIN H. AIRES and F. G. Ross, in their own behalf and on behalf of the Pennsylvania Society of Professional Engineers and the Pittsburgh Chapter of the said Pennsylvania Society of Professional Engineers, and the Pennsylvania Society of Professional Engineers and the Pittsburgh Chapter thereof

vs.

J. FRED TRIGGS or J. FREDERICK TRIGGS

No. 3257 July Term, 1938

In Equity

McNaugher, J.

DECREE

And now, to-wit, December 15, 1938, it is ordered, adjudged, and decreed as follows:

1. That the defendant be restrained from the use of the title or designation of Chief Engineer, Engineer, or any other name implying the practice of engineering, unless and until he become a duly registered, professional engineer, under the laws of the Commonwealth of Pennsylvania.

2. That the defendant be restrained from engaging in the practice of engineering, unless and until he become a duly registered engineer under the laws of the Commonwealth of Pennsylvania; it being understood that if he continue in the employ of the City of Pittsburgh in the Planning Commission, or otherwise, that he may engage in administrative or other duties not involving engineering or the supervision thereof; and it being further understood that pending authority to practice engineering he may engage in the business of surveying, if duly qualified.

3. The costs of the case to be divided equally between the parties.

This decree to become effective March 1, 1939.

By the Court
McN

Consented to:

FRED SHOEMAKER
Counsel for Complainants

JOHN R. BENTLEY
Counsel for Respondent

DO YOU KNOW...

Pertinent Facts Concerning the Professions

2. THE LEGAL PROFESSION

***By* D. B. STEINMAN, Past President National Society of Professional Engineers**

Do you know that:

In *every* State, there is now a State Board of Bar Examiners to determine that candidates have satisfied the requirements as to general and legal education and any further qualifications for admission to the Bar.

The requirements for admission to the Bar are set by the courts and by the legislatures of the individual States.

The American Bar Association and the State and local Bar Associations took the lead in calling for improvement of the *educational* standards of the profession, and initiated the formation of the Association of American Law Schools and the National Conference of State Bar Examiners.

The requirement of written examinations for admission to the Bar is practically universal.

In only 9 States are graduates of certain law schools admitted to the Bar on diploma without written examinations, and only 10 per cent of the total are thus admitted.

Over 95 per cent of the applicants for admission to the Bar have law school training.

Fewer than 50 per cent of all the candidates taking the Bar Examinations in any year succeed in passing. For law school graduates, this percentage increases to 60. For those who are also college graduates with B.S. or A.B. degree, the percentage increases to 80.

Of 185 law schools in the U. S., only 97 are on the approved list of the American Bar Association. The total enrollment in the 185 schools is 40,000 students. Over 60 per cent of the enrollment is now in the approved schools.

40 States require a minimum of 3 years legal training, and 6 States require 2 years.

16 States will not recognize legal training in a school that is not on the approved list of the American Bar Association, and 7 more States give a decided preference to graduates of the approved schools.

7 law schools require applicants to have a college degree before enrollment.

36 States require 2 years of college study before admission to the Bar Examinations, and 29 of these States specify that the 2 years of college study must precede law school training.

Some States require that the law graduate undertake apprenticeship in a law office of a year or less before admission to the Bar Examination.

The possession of good moral character is emphasized as the most important single factor in the admission of applicants to the Bar.

Selection for admission to law schools is being widely tried and studied, and some of the States require certification of moral and general qualifications of prospective law students and registration with the Board of Examiners prior to commencing law study.

The legal profession is considering a probationary period of admission to the Bar for 3 or 5 years, at the end of which time the applicant would stand scrutiny as to his ethical qualifications before receiving a permanent license. One State has already adopted such probationary period.

Only legally admitted members of the Bar are eligible to membership in the National, State and local Bar Associations.

The State and local Bar Associations were organized and effective before the national association, and this tends to diminish the strength and leadership of the national association.

In 1910, only 3% of the lawyers in the U. S. were members of the American Bar Association; in 1920, 9%; in 1936, 16%. (160,000 lawyers in the U. S.; 27,000 members in the American Bar Association.)

9,000 new practitioners are added annually to the legal profession, already numbering over 160,000.

The resulting overcrowding of the Bar is viewed with grave concern by the Profession and by the leaders of legal education.

Based on a comprehensive survey by the Committee on Professional Economics of the New York County Lawyers Association, the Dean of the Columbia University Law School states in his 1936 report that "the local bar as a whole is now so overcrowded as to constitute a serious problem to the public as well as to the profession, for the future as well as for the present."

Quoting from the Dean's report: "More than half of the (legal) profession in New York County are in the income class below $3,000 per year (the median for the entire profession is only $2990); 42½% below the minimum family subsistence level of $2500 per year; one-third below $2000 a year, one-sixth below $1000, and almost one-tenth at less than $500 per year; and a substantial number are on the verge of starvation, with almost 10 per cent of the New York City Bar virtually confessed paupers, as indicated by applications for public relief. . . . The economic distress of some members of the bar concerns not only those sufferers themselves, but also the bar as a whole and the public. It has a tendency to drive many of them to unethical acts. . . . Conditions in the profession throughout the country as a whole are bad enough, but in New York City they are appalling."

Student selection before admission to law schools is advocated by leading *educators* in the legal profession.

The Dean of the Columbia University Law School states in his 1936 annual report: *"The time to eliminate the unfit is before they begin their professional training. Any other procedure is not only wasteful but inhuman. The law schools are in a position to perform this task if they will. Their failure to do so is not only unfair to many of their students but results in actual injury to the profession and indirectly to the community."*

Student selection before admission to leading law schools has been achieved by psychological aptitude tests, personal interviews, questionnaires, letters of recommendation, requirements of high rank in college preceding law school, strict scrutiny of college records; and, along with these, an absolute numerical limitation.

(Continued on page 23)

Tightening up on Engineering Education

By **WILLIAM C. KAMMERER, Consulting Engineer of Cleveland, Ohio, a Member of the Ohio Society of Professional Engineers, and Editor of "The Cleveland Engineer"**

(When reading this article, refer to the diagram on this month's cover)

High educational standards are of vital importance to all professions. Some professions, notably the medical profession, have attained these high educational standards by non-approval of sub-standard or marginal schools. The results which have been achieved in this manner have caused other professions to look into their own educational criteria.

In the engineering profession this problem was long recognized but dormant until attacked by the Engineers' Council for Professional Development:

"Long smoldering ideals and tentative plans, as yet unrealized, crystalized into a new movement.

"Improvement of the quality of the individual engineer was found to be the basic solution of many problems. The Societies had concerned themselves with scientific and technical advance; now they entered a different field, a personal one, the development of the individual engineer. As the outcome five societies, the educational society, and the national body representing licensure of engineers by the State (American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Institute of Electrical Engineers, American Institute of Chemical Engineers, American Society of Mechanical Engineers, Society for the Promotion of Engineering Education, and National Council of State Boards of Engineering Examiners) formed one group, organizing as Engineers' Council for Professional Development, October, 1932." *Fourth annual report E.C.P.D.*

The Engineers' Council for Professional Development (known as E. C. P. D.) after several years of study published a list of accredited engineering schools—schools that met their minimum requirements for engineering education. The E.C.P.D. is the recognized accrediting medium for professional engineering schools in the United States.

While some engineering schools have attempted to build up their courses to meet E.C.P.D. requirements, there is still a wide gap between the standards of accredited schools and those of many non-accredited or marginal schools. Into the latter group fall most of the coöperative engineering schools.

The top flight engineering schools have long recognized that the minimum requirement for training a professional engineer is four years of class room work supplemented by prescribed shop and laboratory courses in the college or university (not in a commercial establishment operated for profit). This four year training period gives the engineer the sound background in basic knowledge which is so essential to him. Except in rare cases a graduate goes through life with only the basic knowledge that he acquired in college. Dexter S. Kimball, Dean Emeritus, College of Engineering, Cornell University, says (Cornell Alumni News 11-29-34), "* * * The University is concerned primarily and necessarily with discovering and teaching basic knowledge, not with its many practical applications, except as they illustrate instruction. Basic knowledge grows constantly, just as does the application of the same. The college graduate, except as he is employed in research, seldom adds much to his basic knowledge but rather to its application * * *."

Contrast the standards of accredited engineering schools with those of coöperative schools where the student's classroom work is cut in half. Obviously his basic knowledge is cut in half too. He spends only 50% of his time in the classroom; the other 50% being spent in the shops of a commercial establishment. For one-half of each school term he is assigned to commercial establishments for his "shop" experience. No commercial establishment, especially in this day of keen competition, can afford to stop its production schedule to show the coöperative student the uses and limitations of its various tools and machines. The coöperative student goes "on the assembly line" to do routine production work. Often his shop period for an entire school year is spent on the same machine.

We know of one junior coöperative student in electrical engineering who spent his entire junior year shop period (one-half of his junior year) filing motor test data on record transfer cards. Since the cards had volts, amperes, etc., clearly marked on them, any body or girl with an eighth grade education could have made the transfer. The nearest this coöperative student approached electrical equipment was the desk fan on a nearby filing cabinet. For this elementary work he was given credit for his junior year shop work. Many coöperative students go through their four year "course" deluded into believing that their abbreviated course in basic knowledge with its "B.S. degree" will place them solidly on the same plane with the engineering graduate holding a degree from an accredited and recognized school.

After "graduation" their early contacts with the keen competition in the engineering profession soon show them how handicapped they are. Within a very few years, their illusion is completely shattered and they realize how sadly unprepared they are to compete in the most overcrowded profession we have today. They are then in a position to testify to the truth of "Life's" graph "The Jobs Youth Want and the Jobs They Get."

Engineering Profession

The reasons for the overcrowded condition in the engineering profession have been cited by Dr. D. B. Steinman, Past President of the National Society of Professional Engineers (AMERICAN ENGINEER, February 1935):

"In 1890 there were only about 2,000 living engineering graduates in the United States. In 1930 there were 158,000 (ages 25 to 64), an increase of 7,800 precent in 40 years.

"In 1890 there were only 1,195 students enrolled in the engineering schools of this country. In 1931 there were 73,386 engineering students, an increase of over 6,000 percent.

"In 1890 there were only 189 students in the graduating classes of all the engineering schools in the country. In 1931 there were 11,595 such graduating students, an increase of 6,000 percent.

"In 1890 there were only 445 students admitted to all engineering schools in the country. In 1931 there were 27,370 engineering students admitted, an increase of 6,000 percent.

"DURING THE SAME PERIOD THE POPULATION OF THE UNITED STATES INCREASED ONLY 95 PERCENT.

"During the thirty years from 1900 to 1930, using U. S. census figures for various professions (ages 25 to 64) per million of total population, the number of physicians decreased from 1,420 to 1,050, a *decrease* of 26 percent; the number of lawyers was reduced from 1,280 to 1,120, a *decrease* of 13 percent; the number of architects remained constant at 300; and, during the period the number of engineers per million of population *increased* from 420 to 1,590, *an increase of 278 percent.*

"The engineering schools of this country are turning out over 10,000 graduates annually (11,595 seniors in 1931). The number removed from the engineering profession by death annually is about 4,000. Hence over 6,000 college trained engineers (net increase) are being added annually to an already overcrowded profession."

For the medical profession Dr. Steinman further cites:

"In 1906 there were 162 approved medical schools in the United States. In 1930 there were only 76; more than half had been eliminated by non-approval.

"In 1905 there were 26,147 medical students in the United States. By 1920 this number had been progressively reduced to 13,798, approximately one-half.

"In 1905 the medical schools turned out 5,606 graduates. By 1919 the number had been reduced to 2,656, a reduction of more than one-half.

"In 1904 4,700 physicians were added to the profession. By 1918 the number of new admissions annually to the medical profession was reduced to 2,975.

"In 1933 in the medical schools of the U. S. and Canada there were 29,940 applications for admission, representing 12,128 applicants, and only 6,457 were accepted and enrolled for the Freshman year.

"Contrast this program with conditions in the engineering profession where many of the engineering schools do everything they can to attract the boys in the high schools, and all applicants are welcomed. Any high school graduate can easily secure admission in the engineering school, and all who apply are admitted without regard to engineering qualifications* or aptitude†.

Reasons For Surplus

"The rapid growth of engineering enrollment 30 to 40 years ago is understandable. With only 2,000 college-trained engineers in the country in 1890 and 32,000 engineers needed, the deficiency was made up by 30,000 non-college men drawn from the ranks. Engineering education was speeded up with accelerated volume in order to fill the vacuum. Now that the deficiency has been made up and the vacuum is filled, is it not time for the filling process to be decelerated?

"Against any conclusion of overcrowding, *many* educators proudly advertise that 70, 80, or 90 percent of their recent engineering graduates have secured employment. The fact is overlooked that the obtaining of positions by these younger, more recently trained, and lower-priced men is generally at the expense of displacement of men in the next higher age groups, and that these younger men face similar crowding out of the profession by economic competition of succeeding batches of graduates.

"The same educators also resist any proposal of selective limitation of student enrollment with the argument that 'Engineering is a culture as well as a career,' and that an engineering education is good for any man even if he goes into other callings. The same thought is used in enrollment propaganda. Nevertheless it would be interesting to ask these educators how many of their students are enrolled in Engineering merely as a culture without intending to follow it as a career. The answer would be negligible or nil. The fact remains that probably 99.9% or more of the enrolled engineering students have chosen engineering as their profession and, when they graduate, they are added to the competitive struggle for engineering employment. Some of them may fail or be forced into other occupations, but until they give up their struggle they constitute an addition to the competitive oversupply tending to depress the economic standards of the profession.

"A great deal has been said and written regarding the economic status of the engineering profession, and the desire to secure more adequate compensation for engineers. Reports, codes, resolutions, and speeches will not go very far in solving this problem. In the ultimate analysis, the answer to the economic problem is given by the inexorable law of supply and demand. So long as there is an excess of supply over demand for any commodity, or any service, the price or wage tends to be reduced to a starvation level. This is the first principle of economics. The only way to improve the economic situation of the engineer is to increase the demand for his services and reduce the oversupply of engineers."

Untapped Educational Field

We, who have had fifteen to twenty or more years of experience in engineering know whereof Dr. Steinman speaks. Do the students of substandard coöperative schools know of the keen competition they will meet in a profession already overcrowded with men of superior training? Do they know that only three engineering schools in Ohio (Case School of Applied Science, Ohio State University, and University of Cincinnati) have been accredited by the Engineers' Council for Professional Development? We believe these facts should be set before them.

In an industrial center like Cleveland there is a large untapped educational field that could be well served by a coöperative school; namely, the field between the level of a skilled mechanic and the field of professional engineering. Professor Walter D. Pitkin of Columbia University briefly points the way: "* * * Specialties abound and increase today. Those destined to reach the top of their profession still require a broader outlook, but he who will be an aviator, or a roofing salesman, * * * or an advertising layout man and not go beyond the $4,000 a year class can find only scattered classes and imperfect courses in the larger schools." To Professor Pitkin's list can be added skilled draftsmen; foremen; conditioned air, Diesel engine, and radio service men; laboratory assistants; and technicians.

The Annual Convention
of the
Ohio Society of Professional Engineers
will be held
February 8, 9 and 10, 1939
at
Cincinnati, Ohio

* Some of the endowed schools have exceedingly high entrance requirements in science and mathematics which is an engineering qualification.—Ed.

† In 1934 nine institutions gave tests "to measure aptitudes helping in determining qualifications for success in engineering education and careers." In 1935 ten institutions gave the tests.—Ed.

THE ENGINEERING PROFESSION

How Shall It Maintain Its Identity and Unity?

By **HARRY E. HARRIS, National Director From the Connecticut Society of Professional Engineers**

In these days of "isms," propaganda and whispering campaigns, it behooves the professional engineer to be on guard against the disruptive elements that are active toward the destruction of that professional unity and public and political recognition that has been attained through his state professional engineering societies and their national body. He should stand fast to consolidate all gains toward greater solidarity, uniform laws, higher requirements, a standard strict code of ethics, and all other issues tending to raise the social, economic and public status of himself and his profession, and resist ulterior activities.

These subversive movements are sponsored and activated by various forces and for various reasons, all selfish and are opposed to the proper advancement of the profession.

These actions are from various sources and the professional engineer is finding them confronting him, on all sides. In spite of the handicaps and barriers presented, he is surmounting them and his State Societies of Professional Engineers affiliated with the National Society of Professional Engineers are rapidly growing in numbers, strength, membership, accomplishments, and power. Because there appear no valid grounds for criticism, there is no open, united stand against the legally recognized engineer and his established professional societies, but in some sections individual groups of different classes present covert and persistent antagonism. Candid opposition is easy to meet and often can be overcome by open and clean representation, but underhanded, poisonous modes of attack put the honest, at the power of the crooked. Some in the electrical industry are privately, but rather emphatically advising their employee engineers not to join their local professional group and even not to apply for registration in their state, thereby putting these engineers at a disadvantage in the practice of their profession reducing them to the fixed status of hired labor, and starting a procedure that may eventually lead to unionization of the engineers in their plants.

Some of the well-known technical societies have been quietly but firmly opposed to the passage of the Engineer Registration laws, and others merely passive. This is easy to understand as their member dues, a large proportion of which is collected from non-engineer voting members, is inadequate to meet their many and varied expenses and overhead and they are dependent largely upon direct and indirect contributions, bequests and support from those large corporations, and utilities which are erroneously unfavorable to a real unity in the engineering profession. With a large number of the members of such societies ineligible as engineers to gain registration, they are a productive soil for the seeds of disparagement and reaction with their paid staffs and elected officers who are jealous of the professional societies, and are actively fertilizing and watering to promote the growth of the noxious weeds of dissension among the professional engineers themselves in an effort to retard professional society growth.

In December 1937, in his address, the President of one large national technical group said, "one primary advantage would be to prevent the coercion of our members by the unions." Almost at the same time the Board of Direction of another large technical group published a report of a Committee on Unionization stating that they found "no positive evidence of coercion" and that "it would be a serious mistake"—"to set up any bar against the efforts of these men to perfect any agency that they believe will improve their economic condition." With these conflicting views in high places in technical national groups, the position of members is confused.

How different from the concise attitude and stated position authorized by the members of the Professional Engineering Societies authorizing their delegates to cooperate with the other national professional groups to oppose coercion of any sort, advance professionalism among the engineers and to frame, seek, and support amendments and laws protecting the engineer against such coercion and oppose legislation that would reduce his status.

Combines of associations have been loosely formed in some sections and dominated by a small committee with autocratic power and star chamber methods claiming to represent the engineering profession, but no one of these combines consist of member bodies composed wholly of professional engineers. The entirety of these member bodies is either wholly non-engineering or has a considerable proportion of its individual members non-engineer and non-eligible for registration as professional engineers. The ulterior object of these combines is obviously to oppose professional solidarity among the professional engineers by dilution with non-engineers and to undermine and sap movements toward beneficial engineering legislation and engineering unity. Favorite tactics employed by their officers is to attempt to hamstring any forward action espoused by the Professional Engineering Society by first claiming to represent a preposterous number of professional engineers and introducing opposing and filibustering activities and then after the success of the action, over and in spite of their seditionary activity against its achievement, loudly claim credit from the public and profession as if it were their own zealous efforts that brought the desirable result. As for the validity of their claim of representing any of the engineers or non-engineers in their member-bodies, that is arrant nonsense, as their individual members not only have no voice in the actions of their delegates, but generally do not even know of their actions.

When an individual or firm adopts the same name or even one that can be confused with that used by another in order to benefit by the good will, advertising or reputation of such other, he can be restrained by the courts and damages can be awarded to the one that such pirating actions have injured. This is a matter of common occurrence as the code of business is somewhat loose and many in business are unscrupulous. It has to be controlled by law and its overt acts occasion little comment from the public. However, engineering is a profession of highest ethics and its codes, written and unwritten are synonymous with honor and integrity. Therefore, is it not rather surprising that a state engineering society changes its name of twenty-eight years standing, to adopt the same nomenclature as that used by a different type of national and state organizations. State "Societies of Professional Engineers" have been widely recognized as

the distinctive designation for those whose affiliation forms the National Society of Professional Engineers. Thus the questions arise, "Does the recent change of name by a western state "Society of Engineers" to the State Society of *"Professional"* Engineers indicate that they are planning to limit their membership to those legally and publicly recognized as professional engineers, or are to become, with other State Societies of *"Professional"* Engineers, a member body of the National Society of *"Professional"* Engineers. Or does it imply or suggest that this change of name is an unethical attempt to misappropriate the rightful label already adopted and having years of usage by strictly professional groups whose membership is limited to legally registered engineers and who are affiliated with the N.S.P.E.?

If the answer to the preceding question is yes, then what is the next raid along these lines to be? Is this to be followed by similar sabotage in other sections, aided and abetted by the forces that are trying by every means to smother and extinguish efforts on the part of professional engineers to remain free agents and unify their profession as have the lawyers, doctors and others? Will we have a mushroom growth of clandestine so-called professional societies or formed by other groups so changing their names?

We have been legally protecting the designation "professional engineer" against individuals and firms having no right to use it, we should require no legal restraint upon engineering societies who are supposed to subscribe to our profession's high code.

Some colleges and universities, whose students come largely from the wealthier class, or who are subsidized in part by corporate interests who feel for some chimerical and ungenerous recision that professional solidarity is inimical to them, are guided by the thoughts of their patrons, and their pedagogues, many of them merely animated textbooks, mindful of those who have first claim upon their compliance, join the arguing, indirect and whispering throng attempting to circumvent the onward progress of the professional movement.

Officers and paid staffs of societies and groups comprised of engineers, pseudo-engineers, and non-engineer associates fear that the growth of professional unity and the strengthening of the official legal status of the true professional engineer will cause depletion in their membership and income. This may be true. Their memberships have seriously dwindled and those of the National Society of Professional Engineers increased. Most of the technical societies are overextended and have too many members of inadequate caliber. In their zeal for members, the admittance committees not only have "strained at the gnat," but they have swallowed gnats, camels and all. At their conventions, you wander among superintendents, financial tycoons, clerical executives, professors, salesmen, company presidents, foreman, etc. until you feel you need a "G" man to discover another bona fide engineer. It would perhaps be a better policy for them to put their own house in order, instead of mistakingly trying to hold their own by subversive attack on the solidarity of the profession of which they claim to be a part.

Prominent speakers chosen because of their opposition to engineering registration are used to address meetings who skilfully employ a profuse flow of ambiguity to confuse their hearers and make them think that registration is not to their own advantage, advising them if they can evade the intent of the registration acts thorugh exemptions that may still exist in some of the laws. The fact remains that progress is inevitable and as engineering laws are amended and strengthened that many of those who have neglected to register when they had the opportunity, ill-advised while they were temporarily exempt or in employee positions, will be left without engineering standing and have to accept and remain in minor positions as professional advancement will be closed to them. This has already happened in many sad cases.

As one example of mosquito tactic attacks on professional growth—three years ago a professor in one of our western universities did a creditable clerical job of compiling and charting a list of the large number of overlapping technical and engineering societies to demonstrate the existing chaotic condition in engineering organizations and to argue that no more new organizations were needed. The publishing of this information inadevertently, but quite emphatically, justified the past and present substantial existence of the National Society of Professional Engineers and its member bodies which started fourteen years ago with 170 members in 1924 in New Jersey, twelve years ago in 1926 in New York, five years ago in 1933 in Pennsylvania and six years ago in 1932 in Connecticut. In fact, the professional movement that culminated in the National Society of Professional Engineers, actually started sixty years ago in Ohio in 1878. The National Society of Professional Engineers was formally incorporated by the several state societies in 1934, the year previous to this compilation, and has been continuing a healthy growth and progressive achievements ever since, until it now has 25 member state societies and 3 or 4 others are preparing to affiliate. However, the above compilation was naively and illogically intended and argued to combat affiliations of state societies with the National Society of Professional Engineers and "right or wrong," to advance the theory "that any national professional society failing also to serve the technical needs of engineers would fail," therefore pressure must be brought upon the "founder societies to combine and give attention to professional aspects of engineering." Perhaps the effect of this penwielding should be likening to Don Quixote tilting at windmills.

The rapid and continuing growth of affiliated professional groups has undoubtedly alarmed the strictly technical societies. Belatedly they are desperately trying to devise structures that will have a more or less professional aspect, not incompatible with their past and present narrow limits or the wishes of their dominating factors, that will lull the thoughts and desires of the individual engineer away from real professional solidarity and lure their members, particularly the employee members, into a false feeling of security that their Society has their professional interests at heart.

This is exemplified in the address of the president of one of the large technical groups in 1937. He discussed an organization of engineers similar to the American Bar Association or the American Medical Society. In spite of the fact that the National Society of Professional Engineers, with its state affiliate societies, have a large membership and have been rapidly growing in the fourteen years since 1924, he states in December 1937, "It is not enough that we should talk about it. Something should be done about it. * * * Local societies would embrace all professional engineers in whatever branch they may practice, residing in a defined area. These local organizations would be united to form a state society to deal with all matters of common interest to engineers of that state. From the state societies the national organization could be effected."

How innocent or ignorant of the great advance in professional unity that seems! They say that imitation is the sincerest form of flattery, but still an imitation is only an imitation, although it may gain some sale on the merits and record of that which it imitates. However,

(Continued on page 24)

Engineering Reclassification in the City of New York

Radio Address Given Recently Over Radio Station WNYC by John Charles Riedel, Deputy Chief Engineer, Board of Estimate, City of New York; Past President of the New York State Society of Professional Engineers; Past President of the Municipal Engineers of New York; Vice President of the Metropolitan Section of the American Society of Civil Engineers; and Vice President of the National Society of Professional Engineers.

The development of a great city like New York, and the administration of its activities and affairs, produces problems of such complexity and intricacy that only the student of civil government may fairly understand their extent. A city is dependent for its very life upon the proper coordination of the many services developed by mankind. The citizenry of a populous community move about, taking for granted the many comforts and many privileges which are theirs, little appreciating the vast amount of work that has been performed in furnishing these services and in maintaining them in an uninterrupted manner.

The government of a community may roughly be divided into the administration of its affairs, the maintenance of its services and the design and construction, as well as maintenance, of the many improvements of a physical nature that make it possible for a community to exist. Ancient civilizations, as revealed by explorations, seem to have provided themselves with facilities that probably were adequate at the time. Each generation seems to have attempted to solve its own problems and to have planned for the development of improvements to serve succeeding generations. The succeeeding generations, however, frequently found that those furnished them were inadequate for newly created needs. It is difficult indeed to forecast what the future may have in store for humanity, but there is a trend toward the development of greater services to all of mankind. Whether one generation plans properly or not can only be revealed as time unfolds.

The City Government must of necessity have trained personnel to assist in the administration and to conduct the routine affairs of a city. Prior to a half century ago the personnel was largely recruited without any protective measures for employees and with little regard for qualifications for the proper performance of the tasks to be assumed. About fifty years ago there came before the public the novel idea of a protected civil service, the purpose of which was to insure proper selection of those seeking employment, without regard to political pressure or favoritism. The first real application in the government of the municipalities now constituting the City of New York made itself manifest in the nineties of the last century. At that time opportunities were offered to young men and, to a lesser degree, to young women, to enter the service by competing for vacant positions. Appointments to vacancies remained subject, however, to a greater or less extent, to political friendship and perhaps pressure. Standards were set up by well-intentioned proponents of civil service and by slow stages workable forms were established.

Among those engaged in city employ for the betterment of its improvements is that important group known as engineers. A casual reflection will reveal that their work is evident on every side. The engineer has made possible the development of a city. He has created the highways, the means of communication and transportation, the water supply, the storm water systems, the sanitary sewerage systems and sewage disposal works, the bridges, and, with the cooperation of its allied profession, architecture, has aided in the development of housings and of buildings for the conduct of industry and commerce. The City of New York has constant need of trained engineers and has sought to obtain these men in the early stages of their professional development.

In the earliest investigations and application of civil service, the municipal commissions of forty years or so ago sought to provide for entrance into the service of the young man end his gradual promotion through the succeeding grades to the highest grade. Before 1890 the schools of engineering had not developed to the high standard of professional standing that is now required. Many men entered the engineering field with scarcely any technical background other than obtained by self-instruction, with the aid of engineering handbooks and textbooks. The introduction of a competitive civil service made it inviting for collegiate and technically trained young men to enter the municipal employ. The recognition by the States that engineering had reached the standing of a profession tended toward the improvement of conditions within the engineering profession itself.

The classifications as they existed up to the early 1920's were never satisfactory. Repeated attempts were made to modify requirements to meet changing conditions, with only indifferent success. Along in the middle twenties, during the peak of the days of prosperity, the engineering profession of the City found itself in a lamentable economic condition. Associations and societies of engineers, uniting in a Joint Committee, presented to the governing bodies of the City of New York requests for modifications in the classification of the engineering service, with the hope that the then distressed economic condition of the engineers might be alleviated and that opportunity might be afforded to young men to enter the profession with the proper professional background and with the proper outlook for the future. The then existing engineering classification was modified to a degree that upon its face seemed to be satisfactory. It was thought that young men would be allowed to compete, under the modified classification, for entrance into the profession, at a minimum rate of $2160, but the existence of the two lowest grades prevented this in some instances and the great bulk of engineering employees, some of whose careers had extended over more than a score of years, found themselves in positions from which they could not readily advance.

With the collapse of the era of prosperity and with the cessation of public works to a most marked degree, those employed seemed content to be able to retain positions. Unfortunately, the cessation of public improvements caused the separation from the service of hundreds of young men who thought they had been fairly launched upon careers in engineering.

With the passing years so many modifications had occurred in the engineering classification, as well as in other related classifications, that the Municipal Civil Service Commission appointed by Mayor LaGuardia when he took

office in 1934 began the study of the entire setup. Frequent conferences were held in the first years of the administration, with the desire to modify the engineering classification and place it upon a sounder basis. Some alarm arose in the minds of the engineering employees that perhaps this proposal to reclassify might really be intended as a means for the reduction of salaries. The engineering societies and associations viewed the proposal with some scepticism, and it was only in the early part of 1937 that they were persuaded that the intention of the Municipal Civil Service Commission was to better the service and not in any way to injure any of those now holding employment.

A meeting, called a little more than a year ago by the Municipal Civil Service Commission, was attended by representatives of many societies and organizations, the membership of which included engineering employees. Very frank discussions were held and out of this meeting there came the appointment of an advisory board to work with the staff of the Municipal Civil Service Commission to the end that an engineering reclassification might be adopted which would better the economic and professional conditions under which employment was possible. The then President of the Municipal Civil Service Commission remarked that it was hoped to prepare a satisfactory reclassification but that it must be understood that the Commission was not a Santa Claus who could distribute gifts with lavish hands. The Commission's representative and the advisory board met almost weekly during the ensuing year, with the hope that with the combined efforts some satisfactory reclassification might be arrived at. A number of tentative drafts were prepared and discussed freely. None of them, up to recently, appeared to be satisfactory. A little less than a month ago the Municipal Civil Service Commission advertised a public hearing upon a proposed reclassification. The hearing was held, and some objections were offered by those interested. General approval, however, was expressed and further suggestions were made.

Following this first submission there appeared about two weeks ago another reclassification upon which a hearing was given on August 5th. This last proposal seeks to establish upon a scientific basis a classification of the engineering and architectural service. It is proposed to eliminate many of the old titles, which now run into the hundreds. It is further proposed to group under four general headings the several groups into which the engineering service will be divided, and to set up, in addition, an administrative service which will include those engineers and architects who are engaged in administrative matters. At the hearing some objections were presented, in that certain groups, small in number, might not receive the same consideration and treatment that would be afforded the other groups. The thought was expressed by the Commission that all the apparent inequalities could be corrected and that when corrected there would be offered a reclassified service which would afford full opportunity for entrance into the service and promotion thereafter of all qualified persons.

One of the matters which provoked much discussion during the year was the protection to be given to those now in the service. The existing rules provide that certain groups of engineering employees may be advanced in salary, when and as the head of a department and the Board of Estimate may determine, to an unlimited extent. Actually there are but few engineering employees in the higher salary brackets, but the engineers have felt that when they had once established themselves by examination as being qualified to hold an engineering position of highest importance, they ought not to be required to take additional examinations when seeking further advancement. The proposed reclassification provides unquestionably for the retention of all the rights and privileges now enjoyed by the present employees. It gives to the employees the right to receive the new titles provided for under the new classification upon request and approval by the advisory board and by the Municipal Civil Service Commission. The advisory board appointed a year ago is to be continued. The membership in this advisory board is at the pleasure of the Municipal Civil Service Commission and the board will act solely in an advisory capacity.

An impartial review of the proposed reclassification leads to the conclusion that it is a most notable advance over those which have been heretofore presented. It may develop that in minor respects some amendments may be required, but in that it provides for the retention of the rights and privileges of the existing employees and gives full opportunity for advancement when such advancement becomes possible, it is a most noteworthy proposal.

Under the reclassification, entrance into the service will be accomplished by open competitive examination into a grade the limit of which is up to but not including $2160 per annum. This grade will be entitled Engineering Assistant or Architectural Assistant.

Some criticism was submitted at the hearings that graduates of engineering and technical schools should not be expected to enter at small salaries. The thought was presented that the minimum salary that should be offered to entrants should be set at $2160 per annum. The present engineering classification which it is proposed to change has two grades below that providing for $2160. In view of the law that the lowest grade in any classification may not have a minimum salary, and in view of the probability that many engineering graduates would be willing to start into a career service if they could receive $1500 or $1800 per annum with an assurance of annual increments, many engineers felt that perhaps the grade as outlined for entrants might not work unfairly.

The next grade above that of entrance will be that of Junior Engineer or Junior Architect, the rates being from $2160 per annum up to but not including $3120. The next higher grade will be that of Assistant Engineer or Assistant Architect, with rates from $3120 up to but not including $4260. The next grade will be that of Engineer or Architect, with rates from $4260 up to but not including $6,000. The grade for Administrative Service will cover the Senior Engineer, the Deputy Chief Engineer, the Chief Engineer, and other similar titles in the architectural and related professions. The rates here will run from $6,000 upward.

Under the provisions of the new proposal all persons in the classified engineering service possessing titles not those mentioned may receive the appropriate new title upon application and upon approval of the Municipal Civil Service Commission. No further examination will be required, for entrance into the grades covered by these new titles, of those who now have the right to unlimited advancement and unlimited salary.

Interviews with many of the representatives of those in the engineering service reveal a general acceptance of the proposal. Perhaps as the details are developed minor modifications may be required, but it may be generally said that the great group of engineering employees affected will welcome the opportunities which may be afforded by this new classification.

The Municipal Civil Service Commission is to be commended and congratulated upon the performance of a task which has presented many vexatious and almost insoluble problems. It is believed that the City will benefit by this reclassification and that the engineering employees will be given greater and more extended opportunities.

REGISTRATION AND THE IRISH ENGINEER

By J. O'DEA, M.E.

Reprint from the "Irish Builder and Engineer" November, 1938

Issued by The Engineers' Association, 1-3 Westmoreland Street, Dublin, Ireland

Registration appears to be in the news to-day. Much interest has centered around the recent Bill for the registration of British Architects and, further afield, the phenomenal progress of registration for engineers in the United States, during the past few years, is creating a headline which is likely to influence opinion on this side of the Atlantic in the near future.

At home, if we are to judge by repeated references in the press, and by animated discussions amongst engineers, there are signs that the question of registration in this country, may become a live issue once more. In writing "once more," we recall an effort which was made some years ago to interest the Government in a registration Bill. This proved fruitless. It appears, however, that to-day there are some who are not deterred by the record of one failure, and who see no reason why another attempt should not be made with better hope of success.

Perhaps, the manner in which representatives are nominated to the vocational Senate has stimulated interest, in so far as it tends to throw on various groups and professions the onus of declaring precisely their status, and the extent of their membership. In the Industrial and Commercial Panel, for instance, precedence has it that the engineering profession was invited to put forward candidates—the Institution of Civil Engineers of Ireland, being selected as the nominating body.

If the Institution included all members of the engineering profession in this country, such a method of nomination would call for no comment, and even to-day, it is probably a fairly workable one, for it is impossible, at any time, ideally to represent a profession, the nature and extent of whose membership is open to many different interpretations.

It is a simple task to state the number of barristers, doctors or dentists in Ireland, but it is not possible to state the number of engineers without raising a hornet's nest. If we say that only the 405 corporate members of the Institution of Civil Engineers of Ireland who reside here are engineers, we are omitting the 740 University Graduates in engineering who do not belong to the Institution, not to mention the members of other Chartered Institutes, and the products of various schools, including the school of practical experience.

It is therefore fairly clear that, apart from securing satisfactory representation in the Senate, the engineering profession in Ireland needs to do a little direct planning to put its house in order, and the first essential step in this direction is the promotion of laws establishing qualification standards. At the outset the mere mention of the legal restrictions implied in registration conjures up visions of further policing, additional hampering, and keener harassing of a community already overburdened with a surfeit of governmental rules and regulations. Paramount though the principles of individual freedom may be to many, it cannot be denied that the urbanities of modern life are purchased at great price, and the continuance of to-day's complex civilization calls for an equally complex social organization involving a certain measure of necessary regimentation.

There are some who set store on the central political authority of the State, and appear to relish the many restrictions and orders emanating from that authority. Again there is a school of thought which sees social salvation in the intelligent grouping of the community on vocational lines, and one wonders if the vocational aspect of the newly constituted Senate is a sign that the philosophy of this school is taking practical shape in Ireland.

The future of various ideologies are of concern here only in so far as it affects the question whether the "Profession" as we know it to-day, will continue to retain its present form, with the generally recognized attributes which have been its character in the past. Judging from the position accorded to it in the constitution of the Senate, there seems little doubt that the profession will continue as a functional unit in the country's social structure, and to seek registration for the engineering profession, even at this eleventh hour, is to seek something which should be of lasting benefit in the coming years.

Let us now reflect generally on the nature of a profession as distinct from a trade, or other occupational group. Many definitions there are, but we select one from Dr. Wickenden, the eminent American educationalist who says: "A profession is a guild organized for self government, one limiting its admissions and recognitions by high standards of technical competency, ethical purpose, and social accountability."

Professions are of many kinds, but here a distinction is drawn between open professions, usually devoted to the arts, and closed professions, usually concerned directly or indirectly with the protection of life, health, and property. In the latter group, we find the professions which are charged with a public trust, and to which the State for reasons of public safety, considers it expedient to grant registration. A musician may be a professional man, but his profession does not necessarily require registration, because incompetency on his part does not, with perhaps minor exceptions, endanger life, limb, or property. He invites the public to be his judge, as do the actor, the author, and the artist.

Where a certain specialized type of technical ability is required, like that of the doctor, the surgeon, the dentist, the engineer, or the lawyer, the appraisal of the practitioner's skill must for the most part rest with his peers. This presumes a standard of ethics, and a sense of responsibility, and requires a considerable degree of autonomy, all of which must remain essential attributes of professions of this kind. It is the implied position of public trust, which entitles certain professions to legal assistance in protecting their good name and reputation from those whose practice or pretensions would abuse it. In return for the privilege the profession undertakes to admit only those of proved knowledge and character,

and retains the right to expel those whose conduct in public relations falls short of its ethical standards.

Such in brief is the underlying principle of professional license, which in taking the form of legislation for a particular profession is commonly termed registration. The character of registration should not be confused, particularly in the minds of engineers, with that of a charter which gives legal privileges to various bodies engaged in the pursuit of special knowledge.

It is true that registration protects the practitioner from unfair competition from the unqualified, and hence has an obvious monetary value, but it is wrong to consider this as being its underlying purpose, or that it should be promoted with this end in view. A profession is on the verge of dry rot, when it resorts to the unworthy expedient of building up a pale solely to prevent outside competition. It is, in fact, only staving off the day when it must forfeit the confidence of its clientéle, and relinquish its duties to more competent groups.

Registration lays emphasis, not on high honours and distinctions, but on the minimum qualifications necessary for admission to practice. It, therefore, encourages the method of certifying competence by examination and, to preserve a sense of fair play, discourages the exemption from this test of any aspirant to membership.

An important desideratum accruing from registration is the protection of the professional designation, and its limitation solely to those who have a legal right to use it. This has a deeper psychological significance than may be at first apparent. Most professions have recognized that their name is the hall mark by which they are known to the public, and that if this name is misused, or associated in any way with incompetence and wrong-doing, the reputation of the profession as a whole is bound to suffer.

Registration has a special value in proclaiming the essential unity of a profession. It fosters the intelligent grouping of those of similar purpose, outlook and training into a common fold for collective service to the community and to the profession itself, regardless of detailed specialities in the field of practice. The medical profession is primarily concerned with the health of the human body. It has, however, over two hundred specialities, but finds it practicable to leave self limitation to a particular field, or fields, a matter of personal honour. The engineering profession has many diverse specialities, and is likely to have many more, but the outlook, the approach to the problem, is essentially the same today as it was in the past, and is likely to remain the same in the future.

Having dealt in the first part of this survey more or less generally with the subject of registration in its widest aspects, let us now consider the case for registration of the engineer, and in particular the Irish engineer.

It is generally accepted that the phenomenal development of applied science during the last half century has won for the engineer a considerable measure of public confidence. He has justly earned a reputation for integrity and competence, but it is not cynical to assert that he has won very little else—not even an exclusive name.

History, precedence and tradition have given the engineering profession prior claim to the title "Engineer." To contradict this is to contradict an overwhelming number of facts, no matter how strong personal impressions may be to the contrary. Reasons unlimited can be given for the misapplication of the term, but the main one in the opinion of the writer, is that "Engineer" has been applied to describe the members of many engineering trades.

To assert that a trade and a profession are one and the same is to misunderstand the function of each, but, for this simple reason, a controversy has been waged around whether or not an engineer is a professional man, and, *mirabile dictu!* a controversy in which engineers themselves have sometimes taken sides. The reputation and progress of the profession, however, continues to suffer so long as its boundaries are not defined by law, and so long as its name can be adopted by anyone wishing to help himself to the reflected reputation which the engineer has to some extent won from the public.

Engineering Penumbra

The confusing fringe, the penumbra of mechanics, machinists, operators, electricians and so forth, who are designated wrongly, as well as the masqueraders who designate themselves wrongly, would duly disappear from the borders of the engineering profession on the enactment of registration laws. No worthy tradesman or operator desires to be referred to as something which he is not, and may have his strong reasons for not wishing to have his trade called by any other name save its own. It is untenable to suggest that the engineer should relinquish his ancient and time honoured name in favour of a numerically much smaller and possibly dwindling group by calling himself "Professional Engineer" or "Registered Engineer." The purpose of the recent Architects' Registration Bill in England was to procure the exclusive right to the cognomen "Architect" instead of "Registered Architect" as defined in the 1931 Act, showing thereby the importance with which a kindred profession regards what appears to be merely a name.

The restriction of the term "Engineer" to the profession may appear to be a formidable task, where misusage has allowed it to be etched in ostentatious brass plates, painted high on hoardings, and chiselled into stone work. Difficulties, however, have not deterred the American engineers, now registered, even when confronted with no less than 272 hybrid, hyphenated misappropriations of the term engineer. American engineers, like the British architects, seem to think that the effort to preserve a name, though difficult, is worth while. Besides it is well known that when a considered ruling is written into the statute book, public opinion will accept it with more readiness and approval than is generally imagined.

Some are of opinion that registration makes engineering a closed profession, wishing to imply that this is undesirable. Certainly registration closes the profession, but only to those who are not qualified to be engineers. What could be more reasonable? Public trust is invested in a general Registration Council to prescribe the minimum standards of quality required for any would-be engineer, and to keep these standards revised in line with the needs of progress.

Others assert that registration closes the door of opportunity to "the poor man's son with the God-given talent" and cite the examples of Watt, Faraday, Edison, the Wrights and others. Any profession is gravely at fault if it has no room for exceptional talent. To provide a suitable fund to meet such anomalies, and further to seek out and endow brilliant but impecunious prodigies, is a quality of pure professionalism which is enhanced rather than discouraged by registration.

Let it not be thought, however, that the obstacles, for there are obstacles, in the way of registration, arise out of lack of unanimity in the matter of principle. In the light of experience from those countries where registration laws are in force, the conscientious objectors formed a very small minority. Much more formidable was the opposition encountered from various groups without, and regrettably within the profession, who, out of misconception of the true function of registration, felt that their several vested interests ran a risk of being jeopardized.

Registration Adopted Elsewhere

To those who hold that registration makes for the advancement of the engineering profession in Ireland it

(Continued on page 24)

NEWS OF STATE SOCIETIES

Editor's Note: THE AMERICAN ENGINEER will carry reports of State and Chapter meetings in the issue succeeding their receipt. We must have copy by the 20th of the month preceding the month of issue. Copy received after that date runs the risk of not being on time.

INDIANA

Engineer J. R. Curry has been recently appointed Field Engineer for the Civil Aeronautics Authority, in region four, comprising the mid-western states, with headquarters at Chicago. Engineer Curry resigned August 15 as Indiana Director of Operations for the Works Progress Administration, which position he had held since its inception. Curry will retain his residence in Indianapolis.

Engineer Curry's duties will be the direction of construction and improvements of airports throughout the middle west by the W.P.A. The Civil Aeronautics Authority was created by recent congressional action to replace the Bureau of Commerce.

The proposed merit system for engineers in the employ of the state, particularly of the State Highway Commission, has been a matter of active study by the legislative committee of the Indiana Society of Professional Engineers and is the most definite proposal in the hands of this committee at this time according to Engineer Frank Hardy, Chairman of the committee. One of the monthly meetings of the Society authorized the legislative committee to proceed in this matter and the Executive Board has taken favorable action on the idea. At the November meeting of the Society, suggestions were asked for as to the groups to be included in the proposed bill, that is: (1) Highway Commission engineers, (2) All highway commission employees, (3) All engineers in state employ or (4) all professional employees of the state. If the proposed bill includes other than Highway Commission employees, it will be necessary to provide some administrative body to administer the law unless these functions can be assigned to some existing board. If only highway commission employees are included the administration of the merit system could be within the Highway Commission.

Suggestions from individuals or chapters will be welcome on the content of the bill or of other proposed legislation, and offer of assistance and suggestions for help from other groups in passage of the bill are desired by the legislative committee. It should be constantly emphasized that there is a need for all members of the Society to have favorable contacts with members of the legislature and for every member of the Society to feel his individual responsibility in the matter of legislation.

Engineer John L. Hayner, formerly Structural Engineer for the Bass Foundry and Machine Co., of Ft. Wayne, has become President of the Ft. Wayne Structural Steel Co., a new firm which has taken over the Bass Foundry interest in steel fabricating and the warehouse steel business. Mr. Hayner is a member of the Anthony Wayne Chapter of the Indiana Society of Professional Engineers.

MISSOURI

THE MISSOURI ENGINEER

Official Publication of Missouri Society of Professional Engineers

During the last month there were forty-five applications received. This brings the membership to 690. This is a little short of the goal set by the membership committee, but it is worth noting that on this date last year the total was only 316. This is a total gain of 374 in one year. The first meeting took place on February 16, 1937 and ten members were enrolled. Our second birthday is still a month and a half away. Can we have that 1000 by then?

In connection with the coming activity in the legislature, the President, E. W. Carlton, has tentatively planned to visit certain groups over the state to organize the campaign. Only tentative arrangements are being made and the final plans will depend on a survey of the situation.

REVISION COMMITTEE ENDS WORK ON PROPOSED LAW

Desired License Bill Ready For Coming Session of Legislature

The principal item of interest, this month, is the release of the revised proposed registration bill for architects and engineers. This latest revision is the product of a committee composed of representatives of the various architects' and engineers' organizations in the state and under the chairmanship of Engineer M. S. Murray, State Administrator for the Works Progress Administration.

The revised bill, which is printed in full in this issue, has been built up out of the best material which was available in the previously proposed bills. It was cemented together along practical lines and under the scrutiny of all interested groups in the state.

It is recognized by all who have worked on the bill that is is not a perfect registration law as set out by various national organizations or as found in states where such laws have been operating for a considerable period of time. It is felt, though, that the primary object is to obtain a license law. It is recognized that the more desirable features of professional licensure are obtained only after the license has been a fact for a considerable period of time.

Those who were responsible for the present proposal are desirous of giving the respective professions an opportunity to promote higher standards of professional conduct and to attract the respect and confidence of the public. The bill is not designed to work a hardship on any person who has qualifications for practicing either or both architecture and engineering.

We wish to remind everyone who reads the proposed bill that it has no malicious intent. It does exclude certain groups who desired to be excluded. It also exempts certain groups that were logically to be exempted. It does not prevent anyone, who is willing to qualify under the provisions set up in the bill, from practicing these professions.

Additional copies of the bill have been prepared and may be obtained by writing to the Secretary, Box 365, Jefferson City, Missouri, stating the purpose to which the copies will be put and the number desired. We wish to enlist the cooperation of every architect and engineer in Missouri.

WILL THE ENGINEERS HAVE A VOICE?

The outlook for engineering is sometimes rather gloomy and it is the tendency at these times for the profession to shrink deeper into itself—muttering discouragedly. Some, even now, would have us believe that the end is near.

This seems ridiculous if we look around a little. Considering only the major fields we find the following:

State Highway Program.

River Development.

Water Conservation and Flood Control.

Railroad Rehabilitation.

National Defense.

Industrial Expansion and coordination.

In all but the last there is a common question mark—political policy? The probable development of each of the first five and possibly the last depends on the action by politically controlled legislatures and the Congress.

What will engineers have to do with all these programs?

There is, at last, a growing respect for the work of the engineer and he is at least consulted as to the details of some of the work. He is usually approached after an idea is hatched and asked what can be done along certain lines. Later he may be called in to work out a way to do it. Finally, when everybody but the engineering profession has approved the work, an engineer is called in to do the job (under the guidance of most anybody but an engineer).

In nearly all cases the engineer is employed to do a job that some one else has devised or controls. The engineer becomes the servant of capital—of government—of everybody but his profession.

It seems proper that the profession as a group should have a voice in the development of programs involving engineering. By this means perhaps more complete coordination and greater effi-

ciency could be incorporated in basic plans. More lasting benefits to all would be the results.

How can the profession obtain a hearing?

There is only one way: By organization and coordination within the profession. When an engineer finally discovers that he has a profession and backs it up by doing everything he can to strengthen its forces, he will find he has a valuable means of gaining a hearing where he should be heard.

PROPOSED REGISTRATION BILL FOR ARCHITECTS AND ENGINEERS IN MISSOURI

(Revision of November 11, 1938 by State-wide Committee)

AN ACT

To define and regulate the practice of the professions of Architecture and Professional Engineering: Providing for the registration of certain persons practicing or offering to practice said professions: creating the State Board of Registration for Architects and Professional Engineers and conferring certain powers and imposing certain duties upon said board: and providing penalties for the violations thereof.

Be it Enacted by The General Assembly Of The State of Missouri, As Follows:

Section 1. Unlawful To Practice Professions of Architecture or Professional Engineering without Certificate of Registration. In order to safeguard life, health, and property, and in the interest of public welfare, beginning one year after the passage of this act it shall be unlawful for any person to practice or offer to practice the professions of architecture or professional engineering in any of its branches, or advertise any title or description which may tend to convey the impression that he or she is an architect or professional engineer, unless such person has been duly qualified and registered or exempted in accordance with the provisions of this act.

Section 2 Terms Defined (a) The term "architect" as used in this act, shall mean a person who is technically and legally qualified to practice architecture.

(b) The term "Practice of Architecture," as used in this act, shall mean the rendering or offering to render advice to clients by consultation, investigation, evaluation, concerning the aesthetic or structural design and supervision of construction of buildings, structures or projects, the repair or alterations of existing buildings, structures, or projects, including the equipment or utilities thereof or any other service in connection with the designing or supervision of construction of buildings, structures or projects for use within the State of Missouri.

(c) The term "Professional Engineer" as used in this act shall mean a person who, by reason of his knowledge of mathematics, the physical sciences, and the principles of engineering acquired by professional education and practical experience, is qualified to engage in the practice of professional engineering as herein defined.

(d) The term "Practice of Professional Engineering" as used in this act, means any professional service, including consultation, investigation, evaluation, planning, designing, preparation of plans and specifications, or the responsible laying out, inspection, and acceptance, of any construction or operation, in connection with any public or private utility, structure, building, machine, equipment, process, works, or project to be constructed or to be put into operation within the State of Missouri, wherein the public welfare, or the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of engineering principles or data.

(e) The term "Board" or "State Board," as used in this act shall mean the State Board of Registration for Architects and Professional Engineers, and shall comprise both divisions thereof, and such board shall act as one entity, except as otherwise provided by this act.

(f) The term "Division" as used in this act, shall mean either the architectural division or the engineering division of the board, as the context may provide.

Section 3. Board of Registration Established. A state board of registration for architects and professional engineers is hereby created and established, which said state board of registration shall be vested with and possessed of the powers and duties in this act specified and also all powers necessary or proper to enable it to carry out fully and effectually all the purposes of this act.

Section 4. Members Appointed; Qualifications; Terms of Office; Vacancies, How Filled; Oath of Office. The state board of registration shall consist of seven members, who shall be appointed by the Governor with the advice and consent of the Senate, three of whom shall be architects and three of whom shall be professional engineers, and the seventh member shall be either an architect or a professional engineer and shall be designated by the Governor to be and, upon being so designated, shall be chairman of said board. Each member of said board, at the time of his appointment and qualification, shall be a citizen of the United States, and a resident of the State of Missouri and shall have resided in said state for a period of at least five years next preceding his appointment and qualification, and he shall also be a qualified voter therein and not less than forty years of age, and shall have been actively engaged in the practice of his profession for not less than five years; provided, that the teaching of architecture or professional engineering at a recognized school, college, or university, shall be considered as having been actively engaged in the practice of architesture or professional engineering. Within ninety days after the taking effect of this act, the Governor shall appoint the members of said board for a term of six years, and one architect and one engineer shall be appointed for a term of four years, and one architect and one engineer shall be appointed for a term of six years, or until their successors are duly appointed and qualified; provided however, that no two members of the same profession shall reside in the same location or within the same section of the state. Upon the expiration of the term of any member of the board, the Governor shall, as herein provided, appoint for a term of six years, a registered architect or registered professional engineer having the qualifications as herein provided, to take the place of the member whose term on said board has expired; provided, that at all times the membership of said board shall consist of a chairman and three architects and three engineers. All vacancies occurring in said board shall be filled by appointments by the Governor with the advice and consent of the Senate, and any such appointments so made while the Senate is not in session, shall be submitted for confirmation at its next ensuing session. Each member shall receive a certificate of his appointment and before entering upon the discharge of the duties of his office shall make and file with the Secretary of State, his written oath for the faithful discharge of his official duty.

Section 5. Secretary To Board; Duties; Bond. The board shall appoint a secretary who shall also be the treasurer of said board, who shall not be a member of said board, and who shall serve during the pleasure of the board. The secretary-treasurer, before entering upon his duties, shall file a bond with the secretary of state in the penal sum of Ten Thousand Dollars, payable to the State of Missouri to insure the faithful discharge of his duties in said office. The premium for such bond shall be paid from the funds received as fees by said Board. The secretary-treasurer of the board shall receive and account for all moneys derived under the provisions of this act and shall pay the same monthly to the State Treasurer, who shall keep such money in a separate fund to be known as the "Architects and Professional Engineers Fund." Such fund shall be kept separate and apart from all other moneys in the Treasury, and shall be paid out as herein provided.

Section 6. Organization of Board; Meetings; Quorum; Powers; Seal. The members of the Board shall, within thirty days after appointment and bi-annually thereafter in the month of October, meet and organize. A quorum for the transaction of any business for the performance of any duty, or for the exercise of any power of the Board, shall consist of not less than two Architect members and two Engineer members, exclusive of the Chairman, who shall vote only in case of a tie vote by other members. The board shall have power to administer the provisions of this Act, prescribe the duties of its officers and employees and adopt rules and regulations not inconsistent with this act, the Constitution or the laws of the State of Missouri, to govern its proceedings. The Board shall establish and maintain an office at Jefferson City where all records and files of the Board shall be kept. Under the direction of the Board the secretary shall have general charge of its office, superintend its clerical business and perform such other duties as the Board may prescribe. Special meetings of the Board, or of either division thereof, shall be held at such times and places as the rules hereafter prescribed by the Board may provide. Notice of all meetings shall be given in such manner as may be provided by the Board. The Board shall adopt an official seal which shall be affixed to all certificates issued by the Board, and to all other instruments as the Board shall direct.

The Board shall have power to employ such consultants and such legal, clerical and other assistants as are necessary for the proper performance of its work, and may make expenditures of the fund herein provided for any purpose which in the opinion of the Board is reasonably necessary for the proper performance, of its duties under this act, including the purchase of supplies, equipment, books, and instruments and may pay the traveling expenses of its employees.

Section 7. Divisions of Board; Organization; Meetings; Powers and Duties. The Board shall be divided into two divisions, one of which shall be designated as the Architectural Division and shall consist of the three Architect members appointed to the Board as herein provided. The other shall be known as the Engineering Division and shall consist of the three Engineer members appointed to the Board as herein provided. The Architectural and Engineering Divisions shall each hold at least two regular meetings each year. Each division shall elect bi-annually from its members, a division Chairman for its respective division. All matters pertaining to the qualifications and examination of the applicants for, and the granting of registration certificates, and all matters of interest solely to either respective division, shall be acted upon solely by the interested division. A quorum for a meeting of a division shall consist of not less than two members of the respective division.

Section 8. Compensation and Expenses; How Paid. Members of the Board shall receive compensation at the rate of Ten Dollars per day for each day or part thereof, during which they shall be in attendance on Board meetings or engaged in otherwise discharging their duties. The compensation of all employees shall be fixed by the Board commensurate with their duties. All compensation for Board members and employees, and all legitimate and necessary expenses, incident to the administration of this act, incurred by members in attending meetings and by the Board in administrating the provisions of this act, shall be paid out of the funds set apart for the board in Section 5 hereof, upon the warrant of the auditor of the state, issued upon a requisition signed by the chairman and attested by the Secretary under the seal of the Board. But no expense of this Board shall ever be paid out of any other fund of the state, either by deficiency bill or otherwise.

Section 9. Board to Keep Records. The Board, and each division thereof, shall each keep a true record of its respective proceedings and a register of all applicants for registration. The records of the Board, or either division thereof, shall be prima facie evidence of the proceedings of the Board, or either division thereof, set forth therein, and a transcript thereof, duly certified by the Secretary of the Board under seal, shall be admissible in evidence with the same force and effect as if the original were produced.

Section 10. Board to Make Annual Report. Annually, as of December thirty-first, the Board shall submit to the Governor, prior to the following February first, a report of its transactions of the year just concluded, and shall also transmit to him a complete statement of the receipts and expenditures of the Board attested by the affidavit of its Secretary, and signed by its Chairman.

Section 11. Qualifications of Applicants for Registration. No person shall be eligible for registration as an Architect or a Professional Engineer unless upon satisfactory evidence being submitted to the respective division of the Board to which application is made for registration, that he be at least twenty-one years of age, and of good moral character. In addition to furnishing proof of his compliance with the above qualifications, the following shall be the additional requisite evidence required that such applicant is qualified:

(a) Graduation from an approved course of at least four-years in architecture, or engineering, in an architectural or engineering school or college approved by the Board as of satisfactory standing; and a specific record of an additional four years or more of active experience in architectural or engineering work of a character satisfactory to the division to which such application for registration is made, indicating that the applicant is competent to be placed in responsible charge of such work; or,

(b) Successfully passing a written, oral or written and oral examination designed to show knowledge and skill equal to that attained through graduation from an approved course of at least four years, and a specific record of eight years or more of active experience in architectural or engineering work of a character satisfactory to the respective division to which such application is directed, and indicating that the applicant is competent to be placed in responsible charge of such work; or,

(c) At any time within five years after this act becomes effective the proper division of the Board may accept as evidence that the applicant is qualified for registration as an architect or a Professional Engineer, a specific record of twelve years or more of lawful active experience in architectural or engineering work of a character satisfactory to the respective division and indicating that the applicant is qualified to design or to supervise architectural or engineering work and has had responsible charge of important architectural or engineering work for at least five years, and provided applicant is not less than thirty years of age. Graduation in a course other than architecture or engineering from a college or university of recognized standing may be considered as equivalent to two years of active practice; provided, however, that no applicant shall receive credit for more than four years of active experience because of educational qualifications. The mere execution of work designed by, or under the control of an Architect or a Professional Engineer, or the supervision of such work as a contractor, superintendent, or foreman shall not be deemed to be active experience in architectural or engineering work. Any person having the necessary qualifications prescribed in this Act to entitle him

to registration shall be eligible for such registration though he may not be practicing his profession at the time of making his application. After this act shall have been in effect five years, Certifications of Registration shall be issued only to those applicants who shall meet the requirements of paragraphs (a) or (b) Section 11, and comply with the provisions of this act.

Section 12. Applicants Shall Apply in Writing on Blanks Furnished; Fees Required. Applications for registration shall be in writing and on forms prescribed and furnished by the Board, shall contain statements made under oath, showing the applicant's education and detail summary of his technical work, his previous examination, if any, and the results thereof, and such other information as shall be required by the Board, and shall contain not less than five references, of whom three or more shall be Architects or Professional Engineers having personal knowledge of applicant's architectural or engineering experience. All such applications shall be filed with the Secretary of the Board, together with the fees herein provided, at least twenty days before the date set for examinations. The registration fees for all applicants for registration as Architects or Professional Engineers shall be twenty-five dollars ($25.00) fifteen dollars ($15.00) of which shall accompany the application, the remaining ten dollars ($10.00) to be paid upon issuance of certificate. The Board shall not remit any fees to registrants or unsuccessful applicants.

Section 13. Examination of Applicants. When oral or written examinations are required, they shall be held at such time and place as the Board or either division thereof shall determine. The scope of the examinations and the methods of procedure shall be prescribed by the proper division of the Board with special reference to the applicant's ability to practice architectural or engineering work in his particular field. Examinations shall be given for the purpose of determining the qualifications of applicants for registration separately in architecture and professional engineering. An applicant failing on the first examination may apply for reexamination at the expiration of six months and shall be re-examined without payment of additional fees. Subsequent examination shall be granted upon payment of such fees as shall be determined upon by the Board, not to exceed $15.00.

Section 14. Certificate of Registration to be Issued; When; Registrant to Obtain Seal. The board shall issue a certificate of registration upon payment of registration fee as provided for in this Act, to any applicant who, in the opinion of the division to which such application is made, has satisfactorily met all the requirements of this Act. In case of registered Architect, the certificate shall authorize the practice of architecture, and in the case of a registered professional engineer, the certificate shall authorize the practice of professional engineering. Certificates of registration shall show the full name of the registrant, shall have a serial number, and shall be signed by the Chairman of the division under which the applicant is registered and by the Secretary of the Board under seal of the Board. The issuance of a certificate of registration by either division shall be evidence that the person named therein is entitled to all the rights and privileges of the profession therein named, during the period the said certificate remains unrevoked or unexpired. Each registrant hereunder shall upon registration obtain a seal of the design authorized by the Board, bearing the registrant's name and the legend, "Registered Architect," or "Registered Professional Engineer." All plans, specifications, plats and reports issued by a registrant shall be stamped with the said seal during the life of the registrant's certificate, but it shall be unlawful to stamp or seal any document with said seal after the certificate of the registrant named therein has expired or has been revoked, and until said certificate shall have been renewed or reissued.

Section 15. Expiration and Renewal of Certificate of Registration. Certificates of registration shall expire on the last day of month of December following their issuance or renewal and shall become invalid on that date unless renewed. Certificate of Registration may be renewed at any time during the month of December by the payment of an annual fee to be determined by the Board but not to exceed the sum of Five Dollars ($5.00). The failure on the part of any registrant to renew his certificate annually and prior to the last day of December, as required above shall not deprive such person of the right of renewal, but the fee to be paid for the renewal of a certificate after the month of December shall be increased ten per cent of the annual fee for each month or fraction of a month that payment or renewal is delayed; provided, however, that the maximum fee for delayed renewal shall not exceed twice the normal renewal fee during any year; provided, further, that no person shall be permitted to practice the profession of Architecture or Professional Engineering after ninety days after the expiration of his registration without first obtaining a renewal therefor.

Section 16. Partnerships; Corporation; Etc. May Practice; When. A partnership or corporation may engage in the practice of architecture or professional engineering in this State, provided that the persons in responsible charge of the respective practices engaged in are Architects or Professional Engineers, and are duly registered in accordance with this act.

Section 17. Practitioners at Time Act Becomes Effective; Required to Pay Fee. At any time within one year after this Act becomes effective. upon application therefor and the payment of the registration fee of Twenty-five Dollars ($25.00), the proper division of the Board shall issue a Certificate of Registration, without oral or written examination, to any Architect or Professional Engineer who shall submit under oath evidence satisfactory to the proper division that he is of good character, that he has been a resident of the State of Missouri for at least one year immediately preceding the date of his application, that he was practicing architecture of professional engineering at the time this Act became effective, and that he has had responsible charge of work of important character. After this Act shall have been in effect one year, the Board shall issue certificates of registration only as provided for in Section 14 hereof.

Section 18. Exemptions From Operation of Act. The following persons shall be exempt from the provisions of this Act, to wit:

(a) A person not a resident of and having no established place of business in this State, practicing or offering to practice herein the profession of architecture or engineering, when such practice does not exceed in the aggregate more than sixty days in any calendar year; provided, such person is legally qualified by registration to practice the said profession in the state of his established residence, and that the requirements and qualifications for obtaining a certificate of registration in such state are not lower than those specified in this Act.

(b) A person not a resident of and having no established place of business in this state, or who has recently become a resident thereof, practicing or offering to practice such profession herein for more than sixty days in any calendar year, if he shall have filed with the proper division of the Board an application for registration and shall have paid the fee required by this Act. Such exemption shall have paid the fee required by this Act. Such exemption shall continue only for such time as may be required for the consideration of application for registration; provided, that such a person is legally qualified to practice said profession in the State of his previous residence, and that the requirements and qualifications for obtaining a certificate of registration in such state are not lower than those specified in this Act.

(c) Any employee or a subordinate of a person holding a certificate of registration under this act, or an employee of a person exempted from registration by Classes (a) and (b) of this Section; provided, his practice does not include responsible charge of design or supervision.

(d) Officers and employees of the Government of the United States while engaged within this state in the practice of the profession of architecture or engineering for said Government.

(e) A person employed in an engineering or architectural capacity by the city, or county of which he is a resident and regularly employed by said city or county in the performance of the duties of his office.

(f) Operating engineers whose work consists of the operation or maintenance of machinery or equipment.

(g) Land Surveyors whose work includes surveying of areas for their correct determination and description and for conveyancing, or for the establishment or reestablishment of land boundaries and the plotting of lands and subdivisions thereof.

(h) Landscape architects and landscape engineers insofar as their work concerns planting, gardening, and landscaping.

Section 19. Non-Residents May Register; When—Fee Required. The proper division of the Board may, upon application therefor, and the payment of a fee to be fixed by the Board, but not to exceed Twenty-five Dollars ($25.00), issue a Certificate of Registration as an Architect or a Professional Engineer to any person who holds a Certificate of Qualification or Registration issued to him by the proper authority of any State or Territory or Possession of the United States, or any country or such other organization as the Board may approve, provided that the requirements for the registration of Architects or Professional Engineers under which said Certificate of Qualification or Registration was issued are of a standard not lower than that specified in Section 14 of this Act;

Section 20. Board May Refuse to Issue, or May Suspend or Revoke Certification: Causes for Action. The Board or the respective divisions thereof, may either refuse to issue, or may refuse to renew, or may suspend, or may revoke any certificate of registration for any one or any combination for the following causes:

(a) The obtaining of or an attempt to obtain a certificate of registration, by the practice of any fraud or deceit or misrepresentation.

(b) Any gross negligence, incompetency, or misconduct in the practice of his profession as a registered Architect or Professional Engineer.

(c) The violation of any of the provisions of this act.

Section 21. Complaint to be Filed; Proceedings Thereon. Any person, including the Secretary or any member of the Board or either division thereof, may prefer charges against any Architect or Engineer registered under the provisions of this Act for violation of any provision hereof, and any such charge shall be in writing, and shall set forth the violation charged, and shall be sworn to by the person making same. Any such charge shall be filed with the Secretary of the Board. Such charges, unless dismissed by the Board as trivial or unfounded upon fact, shall be tried before the board within three months after the date on which they shall have been preferred. The time and place for hearing thereon shall be fixed by the Board, and a copy of the charges, together with a notice of the time and place of hearing, shall be personally served on such registrant, at least thirty days before the date fixed for the hearing. At any hearing, the accused registrant shall have the right to appear personally and by counsel, to cross examine witnesses appearing against him, and to produce evidence and witnesses in his own defense. If, after such hearing, four or more members of the Board vote in favor or finding the accused guilty, the Board may revoke or suspend the certificate.

Section 22. Board May Re-Issue Certificate; Costs. The Board, for reasons it may deem sufficient, may re-issue a certificate for registration to any person whose certificate has been suspended or revoked, providing four or more members of the Board vote in favor of such re-issuance. A new certificate of registration, to replace any certificate revoked, lost destroyed, or mutilated, may be issued, subject to the rules of the board, and charge of Three Dollars ($3.00) shall be made for such issuance.

Section 23. Appeal to Circuit Court. The Board shall have power to determine all matters herein placed within its jurisdiction, and its determination shall be final and conclusive, except that such determination may be reviewed by the Circuit Court of the County or City which is the residence of the person against whom the action of the Board was taken, by writ of certiorari.

Section 24. Power to Subpoena Witnesses; Administer Oaths. The Board, or either division thereof, may, under the hand of its proper officers, and under the seal of the Board, Subpoena witnesses and compel their attendance, and also may require the production of books, papers documents in a case involving revocation of registration or any violation of the provisions of this Act by either an architect or professional engineer registered under the provisions of this Act. Any member of the Board may administer oaths or affirmations to witnesses appearing before the Board, or either division thereof.

Section 25. Witness Refusing to Attend or Refusing to Produce Books or Papers Guilty of Misdemeanor—Penalty. If a person subpoenaed to appear before the Board, or either division thereof, fails to obey the command of such subpoena, without lawful cause, or if a person in attendance upon the Board, or either division thereof, shall, without lawful cause, refuse to be sworn or to be examined, or answer a question, or to produce a book or paper when ordered to do so by the Board, or either division thereof, or to subscribe or swear to his deposition after it has been correctly produced in writing, he may be prosecuted in a court of competent jurisdiction; and upon conviction therein, he may be punished by a fine of not less than One Hundred Dollars, nor more than One Thousand Dollars, or by imprisonment in the County Jail, not to exceed one year, or by both such fine and imprisonment; and in case of a continuing violation, each day's continuance thereof, shall be deemed to be a separate and distinct offense.

Section 26. Roster of Registered Architects and Engineers to be kept. A roster showing the names and places of business of all architects and engineers registered under the provisions of this Act, shall be prepared by the Secretary of the Board during the month of April of each year, commencing one year from the date this act becomes effective. A copy of such roster shall be mailed to each person so registered, one placed on file with the Secretary of the State, and a copy furnished to any person upon request.

Section 27. Violations and Penalties; Misdemeanor. Any person who shall practice, or offer to practice, the professions of architecture or professional engineering in this State, or any persons who shall use the title "Architect," or "Professional Engineer" with or without qualifying adjectives, or who shall use any other words, letters or figures indicating or intending to imply that the person using the same is an Architect or Professional Engineer, without being registered or exempted in accordance with the provisions of this Act, or any person pretending or attempting to use as his own the certificate of registration or the seal of another, or the affixing of a registered Architect's or Professional Engineer's seal on any plans, specifications, drawings, or reports which have not been prepared by him or under his immediate personal supervision, or any person who shall give any false or forged evidence of any kind to the Board or to any member thereof in obtaining a certificate of registration, or any person who shall falsely impersonate any other registrant of like or different name, or any person who shall attempt to use an expired or revoked certificate of registration, or any person duly registered under the provisions of this Act who shall willingly allow his name or seal to be used upon plans or work not actually performed by him, or any person who shall violate any of the provisions of this Act, shall be guilty of a misdemeanor, and shall be punished upon conviction by a fine of not less than One Hundred Dollars ($100.00), nor more than Five Hundred Dollars ($500.00) or suffer imprisonment for a period not exceeding three months, or both. It shall be the duty of all duly constituted officers of the law of this State, or any political sub-division thereof, to enforce the provisions of this Act and to prosecute any person violating the same. The Attorney General of the State shall when requested

by the Board, render such legal assistance as may be necessary to carrying out the provisions of this Act.

Section 28. Invalid Sections. If any Section or Sections of this Act shall be declared unconstitutional or invalid, this shall not invalidate any other Section of this Act.

Section 29. Repeal of Conflicting Legislation. All laws or parts of laws in conflict with the provisions of this Ast shall be, and the same are hereby, repealed except that this Act shall not be construed to affect or prevent the practice of any other legally recognized professions.

NOTE—Additional copies of this bill may be obtained by writing to the Secretary, Box 365, Jefferson City, Mo.

NEW JERSEY

THE HUDSON ENGINEER

Published Monthly by the
Professional Engineers Club of Hudson County, N. J.

JAMES F. KELLY, *President*
WILLIAM G. CHRISTY, *Vice-President*
JAMES A. FOLEY, *Treasurer*
RAYMOND F. LEUTHY, *Secretary*
HUGH C. CLARKE, *Trustee*

December Meeting, Monday Evening, December 19 at Public Service Auditorium, Journal Square, Jersey City, N. J., Business Meeting—No Speaker. Election of Officers, Constitution and By-Laws Revision, Committee Procedure for 1939.

THE MAN OF THE MONTH

The Hudson Engineer, on behalf of the Professional Engineers Club of Hudson County, N. J., takes pleasure in honoring Engineer Richard L. Higgins for engineering achievement and service to the profession.

Engineer Higgins, known to many of us as Dick, was born in Bayonne, N. J. After graduating from Bayonne High School, he studied Engineering at Rensselaer Polytechnic Institute, graduating in 1928 with the degree of E.E. He possesses the State of New Jersey License No. 3262, Mechanical Engineer—Electrical Engineer.

After graduation, he was employed by the Bell Laboratories, New York City, for approximately seven years. His position was in the Plant Construction and Plant Operating Departments, and included design, specification, supervision and final inspection on new installation and alterations to electrical single and polyphase alternating current systems, direct current systems, isolated battery systems, and power rooms for supplying diversified power, such as special frequencies, special voltage, filtered power circuits, etc.

In May, 1935, he was granted a license and shortly thereafter opened an office in Newark, N. J., as a Consulting Engineer on mechanical and electrical problems pertaining to power plant design and operation.

Dick has been an active member of the Professional Engineers Club of Hudson County and the State Association, having served on various committees. As Chairman of the Advertising Committee for the 1938 State Convention held in Jersey City, his efforts were instrumental in producing the successful 72 page issue of the Hudson Engineer, earning not only the gratitude and admiration of his fellow members, but the entire membership of the State Association. He was also Chairman of the Entertainment Committee and Reception from 1934 to 1937, successfully handling many Club affairs, such as Smokers, Card Parties and Dinners.

NOMINATIONS

The Nominating Committee, Hugh C. Clarke, Chairman, Harold T. Anderson and William Caldwell, nominated the following for officers of the Club for 1939:

President, James F. Kelly; Vice-President, William G. Christy; Secretary Raymond F. Leuthy; Recording Secretary, Frank C. Schlindwein; Financial Secretary, Norman B. Newcombe; Treasurer, James A. Foley.

CONSTITUTION AND BY-LAWS

The Constitution and By-Laws of the Club have been revised by the By-Laws and Fees Committee, Alvin L. Ruefer, Chairman; Clinton M. Froehlich, Samuel Aronson, Peter F. Daly and James A. Manalio.

At several meetings of the Executive Board these revisions have been carefully considered and approved.

An important addition to the by-laws is a procedure for the regular Standing Committees. All committees will be expected to follow the procedure outlined and submit a written report of their activities at the regular meetings, instead of the all-to-often-heard expressions, "no report" or "progress."

Something was once said about putting a shoulder to the wheel. Our 1939 wheel is a large one and can be moved toward accomplishment only by the concerted effort of a good many shoulders.

MEMBERSHIP

We welcome into the Club and introduce to the membership the following new members, all of whom were accepted at the last meeting held in November:

Full Member:

Earl J. Reddert,
94 Greene Avenue,
Madison, N. J.

Associate Members:

Frank J. Barnwell,
65 Shepard Avenue,
West Englewood, N. J.

Edward T. Kelty,
68 Clifton Place,
Jersey City, N. J.

William M. Goldey,
225 Grant Avenue,
Jersey City, N. J.

John C. Morris,
577 West Side Avenue,
Jersey City, N. J.

Gerard T. Shannon,
645 Bergen Avenue,
Jersey City, N. J.

CHAPTER ACTIVITIES

Bergen

Robert Simon, Secretary, 39 Copley Ave., Teaneck, N. J.

Essex

H. P. Matte, Secretary, 96 Boyden Ave., Maplewood, N. J.

The first autumn meeting, held in October, was confined to a dinner gathering for members, guests and the ladies. Dinner was followed by the showing of old "flickies" and the development of the cinema from 1895 to 1907.

November meeting was devoted mainly to Convention committee reports which indicated untiring efforts to make the 1939 Convention bigger and better than ever.

Hudson

R. F. Leuthy, Secretary, 12½ Nesbitt St., Jersey City, N. J.

The meeting of November 28th was held at the Public Service Auditorium in Jersey City and to a large attendance, Mr. Dore Sundland discussed and illustrated "Vibration Control". By way of contrast his lecture was followed with a display of the prestidigitator's art by Engineer Russell Wise, Jr., of the Passaic County Chapter. At the business session of the meeting the coming Convention program was outlined by Engineer Chester Mueller of the Essex County Chapter who reported that the Convention Committee was very much gratified at the wholehearted response of the Hudson Chapter in procuring advertisements and exhibits.

Morris

A. L. Trimpi, Secretary, 279 Main St., Chatham, N. J.

Meeting held November 18th in the new National Park Museum in Morristown, N. J. The meeting highlighted the progress of checking up misrepresentation of the engineering profession. The committee charged with this assignment is doing good work. There was an interesting discussion regarding the advantages of chapter membership influence in the field of industrial engineering. A member of the Essex County Chapter spoke on the coming Convention.

Middlesex

D. M. Pail, Secretary, City Hall, New Brunswick, N. J.

The November Meeting featured a talk by Mr. Jacob M. Klein, Council, Port Raritan District Commission, who expertly expounded the accomplishments and objectives of the Commission. Every licensed and non-licensed engineer in Middlesex County should have attended this informative meeting. Engineer M. W. Parsons, Jr., from the Essex County Chapter, urged the support of the members in the activities of the 1939 Convention.

Monmouth and Ocean

Leo K. McKee, Secretary, 16 McLaren St., Red Bank, N. J.

No copy of proceeding submitted. Members were contacted, October Meeting, by Engineer Chester Mueller, Essex Chapter, soliciting support for the annual Convention at Newark.

Passaic

H. L. Bickford, Secretary, 110 Diamond Bridge Ave., Hawthorne, N. J.

October meeting was well attended and the Chapter Business Session was handled in an expeditious manner. The spirit in the Passaic Chapter is commended. Convention plans were outlined by Engineer Parsons of the Essex Chapter.

South Jersey

F. D. Braun, Secretary, 22 North Nashville Ave., Ventnor, N. J.

November dinner meeting was held in Camden, N. J. Routine business was transacted and the guest speaker was from the Essex Chapter and the subject was the Convention.

Union

Thomas A. Jenkins, Secretary, 335 Linden Road, Roselle, N. J.

West Jersey

Paul P. Rice, Secretary, Morris St., Phillipsburg, N. J.

Regular October Meeting was held Wednesday, October 26, 1938, and attended by 45 Engineers including delegates from Engineering Societies of Penn. This meeting was held at the request of a number of engineers in industry, who have recently become licensed. Two outstanding speakers were secured on subjects pertinent to this occasion.

Engineer N. J. McGuinness, Assistant Secretary, State Board of Professional Engineers and Land Surveyors on "Professional Engineers in Industry as Related to the License Law," and Engineer Jay A. Jacobs, Chief Chemical Engineer in charge of research, Colgate Palmolive-Peet Co., Jersey City, and President of the New Jersey Association of Professional Engineers and Land Surveyors on "Professional Engineers in Industry as Related to the Professional Movement."

All engineers in the three counties were invited to this special meeting, particularly those in industry who are not now licensed. A delegation from the Lehigh Valley Chapter of the Pennsylvania Society also attended.

Engineer C. Mueller from the Essex County Chapter was present to give details concerning the 1939 Convention.

Headquarters

Ernest F. Weeks, Sec-Treasurer, 200 E. 5th St., Patterson, N. J.

A meeting of the Executive Board and Board of Trustees was held at the Robert Treat Hotel, Newark, N. J., November 3rd, 1938. Those present included President Jay Jacobs and Engineers Andress, Francisco, Matte, Seymour, Rice, Tilton, McKee, McInnis, Wise, Randolph, Kreuger, Kissam, Wright and Weeks.

The President made a trip to the last West Jersey Chapter meeting and expressed his appreciation at being invited. He desires to attend one meeting of each County Chapter before the year closes.

Engineer Kreuger, the Deputy Commissioner of Labor, stated that a committee is being drawn up by his Department to develop a State Elevator Code and asked this Association to appoint one member to serve on this committee. He stated that elevator accidents were up 400 percent in 1937, that there are many old elevators that need inspection and that the duty of the new committee is to study for a revision of the present code.

President Jacobs appointed Engineer Arthur H. Windle, of the Colgate Palmolive-Peet Company, to represent the Engineers on this committee.

Engineer Kreuger, for the Labor Department, stated that another committee is being drawn up to study revisions to the present Explosives Act and requested the Engineers to name a member to be on this committee.

Engineer Allen Trimpi, of Chatham, New Jersey, was appointed by the President to represent the interests of the Engineers on this State Labor Department Committee.

Engineer George W. Andress, Chairman of the Convention Committee, made a report for that Committee and stated that the Exhibits and Advertising solicitation is beginning to take effect and that the money is beginning to come in. There will be 42 Exhibit spaces.

Engineer George F. Randolph, Director to the National Society, rendered a report concerning the recent National Society Convention held at the William Penn Hotel in Pittsburgh. This report will appear in the Convention issue.

NEW YORK

The Brooklyn Engineers Club held its regular meeting at The Club House on December 8. A paper, "Adventures in Color Photography" was presented by Dr. Eric Hausmann, Dean of the Graduate School, Polytechnic Institute of Brooklyn and member New York State Board of Examiners of Professional Engineers; and Dr. D. B. Steinman, Past President Brooklyn Engineers Club, Past President National Society of Professional Engineers, and member New York State Board of Examiners of Professional Engineers.

After a brief outline of processes and methods, Dean Hausmann projected a series of beautiful color photographs taken by him on a recent trip through Europe, from the land of the midnight sun to the blue waters of the Mediterranean; and Dr. Steinman projected a series of natural color photographs taken by him in New England and New York to show the scenic beauties of land, sky and water that can be found in this country.

WHY IS A COMMITTEE?

But first, what is a committee? A committee is a relatively small number of members of an organization which undertakes to perform a certain service for or on behalf of the whole organization. Often a committee appointment is regarded as an honor. But it isn't. Committee service is a job.

Committees are appointed in the confidence that the functions for which the committee was created will be performed, faithfully and well. In accepting committee duty, the member gives his virtual promise that he will "do his stuff."

When a committee fails to percolate, it has done a double injury to its organization. It leaves the work undone in the first place, and stands in the way of anyone else doing the work in the second place. And to this may be added the blighting effect on the morale of the membership which results whenever the program of the organization is hindered or the obligations of officers and committees treated as of little importance and no binding quality.

Fellow-members, when you accept official or committee obligations, in heaven's name, make good. Do the job if possible. If you can't, then step aside and clear the way for someone else. To fall down on the job is lamentable; but to lie down on the job is shameful and inexcusable.

With the advent of the 1939 New York's World Fair, let's put our shoulders to the wheel and make it interesting for our visiting engineers.

GEORGE A. DORFMAN,
Editor, Brooklyn Engineers Club Bulletin.

Kings County Chapter of the New York State Society of Professional Engineers, Inc. held its regular meeting December 15th at the Brooklyn Engineers Club House. The meeting was followed by a Christmas party with Fred Wackenhut as chairman of the program committee. James F. Fairman is president of the Chapter, and George A. Dorfman is secretary.

BRONX COUNTY PROFESSIONAL ENGINEERS HOLD SUCCESSFUL MEETING, AGE DISCRIMINATION DISCUSSED

The Bronx County Chapter of the New York State Society of Professional Engineers held their regular monthly meeting at the Concourse Plaza Hotel, December 1.

Engineer Rudolph C. Lang, President, presided and a nominating committee for officers for the ensuing year was elected comprised of Engineers William Arctander, Raymond J. Van Wagner, Paul T. Treutler, Ernest F. Fox and Edward B. Fitzpatrick.

The following seven new members were elected: Ralph P. De Marco, Sidney Frieman, Benjamin Harris, John G. Burke, George H. Stumpf, Paul S. Sechy, W. M. Winguist.

Engineer Walter C. Federlein, Chairman of the Committee on Age Discrimination and Unemployment reported on recent legislation reducing the hours of the working week, provisions for Unemployment Insurance, and the elimination of age limits from all Civil Service qualifications except where physical ability is required. In January 1938 the Committee, represented the Chapter at a meeting of the Wadsworth Joint Legislative Committee and in April 1938 the Governor signed a bill carrying the recommendation to remove the age limit from the Civil Service Requirements except as noted above.

Engineer Federlein further stated that Group Life Insurance ratings and contracts discriminated against the hiring and retaining of persons over 40 years of age in private industry. Charts and statistics have been prepared by his Committee for submission to the Wadsworth Joint Legislative Committee, which is working on the problem.

Consideration and study is being given by the Committee to compulsory high school education with a sufficient number of free technical, vocational and trade schools; a more extensive social security act; adequate old age pensions, and an elastic Public Works Program to take up the slack in private industry.

Engineer Leonard A. Swarthe addressed the meeting on "Easement by Inference" and was ably supported by Attorney Bernhard Steinman and Engineer Joseph Hefele. They explained how easements may, though not specifically stated in the deed, run with real property by inference; how Court decisions have established the validity of such easements and of how much value this knowledge is to property holders present and potential and to Engineers.

Engineer Louis Davidson, Chairman of the Patent Committee of the New York State Society of Professional Engineers and the New York County Chapter, presented the subject of Patents which affect everyone in some form or other and are of vital interest to Engineers and Scientists. He stated that the Constitutional Provisions set up to protect the inventor have been

to a large extent voided by supplementary laws reducing the incentive to create and patent new ideas, which eventually become the property of the public and thereby creating a direct loss to everyone. He stated that the Society of Professional Engineers is giving support to new Patent Legislation which will be of benefit to inventors and in consequence of direct benefit to the General Public.

The members of the Bronx Chapter and their guests who attended this meeting had a rare opportunity to learn much of value to them as Engineers, and of the work the Chapter is doing.

Members of the Bronx County Chapter and their friends had the opportunity of visiting the large baking plant of the National Biscuit Company in New York City recently.

The trip was arranged through the courtesy of Engineer Rudolph C. Lang, President of the Bronx County Chapter, who is a mechanical engineer connected with the National Biscuit Company.

Engineer Lang was ably assisted by Mrs. Lang who made the trip an interesting and pleasant one for the ladies.

At the end of this interesting and instructive trip, each guest was presented with a neatly packaged sample of the baked products they had seen in process in the plant.

OHIO

THE OHIO SOCIETY ACHIEVES MUCH—MERITS MUCH

If there has been the slightest doubt in the mind of any engineer in Ohio as to the usefulness and value of the Ohio Society of Professional Engineers, or who has been indifferent to renewing his membership, or who has debated the advisability of joining the Society, some recent activities and achievements of the State Society should be self-convincing. The Board of Direction, under the leadership of President E. G. Cantwell and Secretary John Laylin, has considered salary schedules and the recognition of all engineering professions, and acted upon these questions to the ultimate benefit of every engineer directly and the engineering profession in general.

In recent meetings of the Board of Direction there was much discussion of the schedule of salaries and the comments of various engineers on the salary schedule bill which provides for change from per diem to monthly salary basis. Taking action in the matter the Board passed the following resolution:

Whereas, The Schedule of Salaries for Engineers and Engineering Aides recently set up by the Ohio Department of Highways has brought a number of protests from engineers and engineering aides who have heretofore been compensated on a per diem basis, and

Whereas, Ohio Society has heretofore gone on record as recommending the standard schedule of salaries approved by the Society, therefore, be it

Resolved, That as an emergency measure, Ohio Society recommends to the Ohio Department of Highways that the monthly salaries of engineers and engineering aides be computed on the basis of twenty-five times their daily rate. Such rate to prevail until action may be taken to thoroughly study and rearrange salary schedules, and be it further

Resolved, That a copy of this Resolution be transmitted to the Director of Highways of Ohio.

Acquainting Highway Director Ivan Ault with the resolution, President Cantwell asked the Director for early consideration, to which Director Ault immediately replied that he was making changes of rates for various classes, saying further, "I am happy to do this in justice to the engineers of Ohio."

Other important steps recently taken were the appointment of a special committee on Highway Department reorganization, and the consideration of a bill to be introduced in the next General Assembly. Such bill has been prepared and filed with the General Legislative Committee. Appointment of special committees to establish a highway engineering section, a public utility engineering section, a private practice engineering section and an industrial engineering section within the Society. Also a special committee to study the type of engineering service in the various departments of the State of Ohio, and make recommendations to bring about the compensation therefor in accordance with the "Schedule of Salaries for Professional Engineers in Ohio," adopted by the Society last February, and the selection of a sub-committee of County, Municipal and State engineers to cooperate with the Ohio Planning Survey in its work of analyzing the road and street needs in the various sub-divisions.

A number of important accomplishments of the Society in the past place it among the most helpful and influential groups in the State. Enactment of the Engineering Registration Law in 1933 was one of the most outstanding achievements, which measure has been chosen as a model by a number of the States. Forty States now have engineering registration laws.

As a result, the many important steps taken by the Ohio Society of Professional Engineers in behalf of engineers and the public have brought general recognition and commendation, and resulted in support in the form of memberships and affiliations from all classes of the engineering profession.

The Board of Direction, which is the policy-making group of the Society, is made up of the officers, the retiring President, and one delegate from each of the affiliated chapters of the State. The personnel of this board is as follows: E. G. Cantwell, Columbus, President; E. A. Lawrence, Columbus, Treasurer; John Laylin, Columbus, Secretary; Frank C. Tolles, Cleveland, Vice-President; Nelson J. Bell, Dayton, Vice-President; J. R. Burkey, Columbus, Past President; H. G. Sours, Stow, Akron Soc.; Chas. H. Fritche, New Philadelphia, Canton Regional Soc.; Walter W. Graf, Lancaster, Central Ohio Soc.; Edward Larson, Cincinnati, Cincinnati Soc.; Wm. C. Kammerer, Cleveland, Cleveland Soc.; Glenn R. Logue, Columbus, Columbus Engineers Club; F. J. Cellarius, Dayton, Dayton Soc.; F. H. Frazier, St. Clairsville, Eastern Ohio Soc.; R. E. Jenkins, Gallipolis, Gallia-Lawrence-Jackson Soc.; Boyd V. Wright, Logan, Hocking Valley Soc.; H. F. Gerold, Sandusky, Lake Erie Soc.; G. Taylor Evans, Poland, Mahoning Valley Soc.; H. D. Schoonover, Mt. Gilead, Marion District Soc.; C. R. Hanes, Lima, Maumee Valley Soc.; John E. Burress, Troy, Midwestern Ohio Soc.; C. W. Stacy, Marietta, Muskingum Valley Soc.; Jay M. Crabbs, Painesville, Northeast Ohio Soc.; L. G. Shenberger, Ashland, North Central Ohio Soc.. Dr. Thos. J. Smull, Ada, Ohio Northern Univ. District Soc.; H. C. Growdon, Portsmouth, Portsmouth Soc.; Wm. F. Schepflin, Fremont, S. O. S.; A. P. Cooper, Georgetown, Southern Ohio Soc.; M. J. Bahin, Springfield, Springfield Dist. Soc.; R. H. Spencer, Mingo Inct., Steubenville Soc.; C. S. Finkbeiner, Toledo, Toledo Soc.; C. C. Reimer, Middletown, Tri-County Soc.; C. M. Sprague, Zanesville, Zanesville Regional Soc.

Reprint from "Engineering Age"

Edward Larson, of the engineering firm Turrell & Larson, Cincinnati, was appointed General Chairman of Committee on Arrangements for the Annual Convention of the Ohio Society of Professional Engineers to be held at Cincinnati, February 8-9-10, 1939.

Representing the Cincinnati chapter of OSPE, of which he is President, and as a delegate of the Cincinnati Chamber of Commerce, "Ed," as he is known among his many friends, attended the Pittsburgh Convention of the NSPE October 18-19-20 and convinced the Board of Direction that "Cincinnati is the ideal place for the 1939 national convention."

The Ohio Valley Chapter of the American Institute of Mining and Metallurgical Engineers held a meeting at St. Clairsville on November 2, with more than 300 in attendance, including representatives from the Pittsburgh Coal Company. The Engineers of nearly all mining companies in the Ohio Valley District were present, and there was general discussion of problems now facing the coal industry.

Among the speakers on the program were B. M. Bird, Columbus, Chairman of the Chapter; Professor H. E. Nold, Director of Mines, Ohio State University; L. E. Young, Pittsburgh Coal Company; R. C. Allen, former Chairman; R. V. Clay and Gerome White of the Hanna Coal Company; A. J. Rufini, Cadiz, Wheeling Township Coal Company; Charles Lotz, St. Clairsville, of the Weirton Coal Company.

Frank W. Jennings, President of the Jennings-Lawrence Company, civil and municipal engineers, Rowlands Bldg., Columbus, died on September 28 after an illness of about three years. He was a native of Logan County and attended Ohio State University.

The Jennings-Lawrence Company was founded in 1907 by Mr. Jennings and E. A. Lawrence, who is treasurer of OSPE, and it is one of the best known engineering firms in Central Ohio, having served as engineers for all neighboring villages and communities and many other municipalities.

Mr. Jennings was past president of OSPE; past president Central Ohio Society, American Society Civil Engineers; member of the NSPE; and charter member and past president of the Columbus Engineers Club. He was chief engineer in charge of Camp Sherman during the World War.

The Springfield Engineers Club held its monthly meeting on November 15th, and heard an illustrated address by Harold Van Doran, of Toledo, on the subject "Design of Machinery, and Improving Its Appearance."

The Dayton Society of Professional Engineers enjoyed a program of entertainment and dancing at the Miami Hotel on November 17th. It was a formal occasion and about 75 attended, mem-

bers of the Society and their wives. "A good time was had by all" and officials of the club are planning similar parties in the future. The next program of this nature tentatively is scheduled for Valentine Day.

The principal speaker at the monthly meeting of the newly formed Lorain County Society of Professional Engineers was R. L. Harding, representing Wilbur Watson and Associates, Cleveland. The Watson Company is the consulting engineering firm with Walker and Weeks, architects, Cleveland, designers of two large bridges to be constructed at Lorain. During the business session a resolution was passed requesting state officials to give preference to local resident engineers for work in the county.

The officers of the Society are Donald E. Patterson, Lorain, President; R. E. Hollis, Elyria, Secretary; and a committee consisting of C. A. Brown, Lorain; D. W. Kothe, Amherst, and J. S. Wetherill, Oberlin.

Charles W. Wells, Newark, was elected President of the Central Society of Professional Engineers at its regular meeting held at Newark. Neil Burdette, Ohio Power Company, Lancaster, was named Vice-President, and Thomas Phillips of the Licking County Engineers, was elected Secretary-Treasurer. Directors chosen were Walter Graf, City Engineer, Lancaster; Lawrence Beecher, Mt. Vernon; C. T. Kaiser, Newark. Dr. W. C. Ebaugh, Denison University, Granville, a member of the Society, was a speaker, talking on "Phosphates."

At a recent meeting of the Canton Regional Society of Professional Engineers held at Canton, "Trends in Chemical Engineering" was treated in an address by Dr. Carl F. Prutton, Professor in Chemical Engineering at the Case School of Applied Science, Cleveland.

At a meeting of the Midwestern Society of Professional Engineers at Bellefontaine on the evening of November 14th, after a turkey dinner, officers were elected as follows: Roscoe Bowman, Sidney, Assistant Division Engineer in charge of Maintenance of the Department of Highways was elected President. H. R. Craig, Wapakoneta, Deputy County Engineer, re-elected Secretary-Treasurer, and T. D. Kuckuck, Celina, Mercer County Engineer, re-elected Vice-President.

The Northwestern Ohio County Engineers Association and the Ohio Northern University District Society of Professional Engineers held meetings in Findlay on November 16th. The former began its session at noon and continued during the afternoon with Prof. Virgil Overholt the principal speaker.

Election of officers for the coming year resulted in the selection of Elmer Hilty, Columbus, chief engineer Bureau of Construction, Ohio Department of Highways, President; E. D. Kuckuck, Celina, Vice-President; E. H. Hoffman, Findlay, Secretary-Treasurer; and an Advisory Committee consisting of Dr. T. J. Small, Ada; George M. Lieber, Fremont; Kenneth B. Graham, Mt. Gilead; J. E. Leader, Defiance, and Ralph G. Wright, Marion.

The latter society held its program during the evening, the speaker being L. A. S. Wood of the Western Electric Company, Cleveland, who talked on "Road Lighting for Seeing."

The Toledo Society of Professional Engineers at a recent meeting announced the officers elected for the year 1938-39; President, A. S. Forster; Vice-President, K. M. Waddell; Secretary-Treasurer, C. E. Pettis; Chemical Director, Henry W. Hess; Civil Director, Carleton S. Finkbeiner; Electrical Director, Gil Southern; Mechanical Director, R. M. Batch; Structural Director, H. J. Wernert; Wood County Director, J. J. Walker.

The Society is taking an active interest in attempting to secure employment for qualified local engineers for work in connection with extensive improvements in the Toledo Water Works System.

PENNSYLVANIA

The November meeting of the Harrisburg Chapter, Pennsylvania Society of Professional Engineers was held at the James Wilson Hotel in Carlisle and a fine dinner was enjoyed.

Samuel Sacks, Chairman of the Legislative Committee for the National Society and National Director from Pennsylvania, discussed briefly certain features of the National Convention at Pittsburgh. He also informed us that the Architects and the Engineers are at last working together for the good of both and have agreed that neither body will promote legislation without submitting it to the other.

He also gave a brief outline on the progress made in the last year to stamp out unethical practice.

The nominating committee consisting of Engineers Bryan, Berry and Miller made their report and announced the nominees for Chapter Offices for the year 1939 were as follows:

President, H. S. Mattimore; *Vice-President,* John M. Moltz; *Secretary,* Russell S. Conrad; *Treasurer,* Paul Witmer; *Chapter Director,* Three Year Term, Irvin H. Geiger, Hubert C. Eicher; *Chapter Director,* One Year Term, Wm. S. Hammaker*.

George Rahn then introduced the speaker of the evening, Donald Cadzow, who gave a very interesting talk on the adventures of his early life in the far north.

The Harrisburg Chapter held its December 19, meeting at the Harrisburger Hotel. This was a business meeting for the transaction of any business before the Chapter and reports from the Chairmen of Committees.

THE PITTSBURGH ENGINEER

Issued Monthly by the Pittsburgh Chapter of Professional Engineers

THIRD ANNUAL MEETING AND DINNER

"The Engineering Profession" Assembly Room, Fort Pitt Hotel, December 15, 1938, 6:30 P. M., Annual Election of Officers.

Toastmaster: Engr. E. A. Holbrook, Dean of the School of Mines and Engineering of the University of Pittsburgh.

Speaker: Engineer Perry T. Ford, President Elect, National Society of Professional Engineers, Secretary, Ohio State Board of Registration for Professional Engineers and Surveyors of Columbus, Ohio. His subject: the "Development of a Professional Consciousness."

Pittsburgh Chapter-Committee Reports:
Ways and Means: Engineer Charles A. Finley
Internal Affairs: Engineer John M. Duff
Foreign Affairs: Engineer Edward J. Ducey

NEW MEMBERS—MEMBERSHIP STATUS

All members will be interested in the following new member and will want to welcome him into the Society and to Chapter meetings. Engineer F. Hughes Moyer, 3234 Parkman Avenue, Pittsburgh, Pennsylvania. Total members, 168; members transferred, 0.

OBSERVER'S NEWS NOTES

Engineer Alex Hutchinson, President, Pennsylvania Society of Professional Engineers, underwent an operation at the Columbia Hospital, Wilkinsburg, Pa. The hospital reports operation a success and patient doing well. We wish Engineer Hutchinson a speedy recovery.

Engineer Johann Hahn has been connected since August 1, 1938, with H. A. Brassert & Co., Berlin, Germany. Engineer Hahn tells us he expects to move permanently to Germany.

Engineer Thomas J. Mitchell has been appointed Assistant Engineer of Tests, Allegheny County Department of Public Works. Engineer Mitchell is looking after ceramic glazed bricks for lining the Liberty Tunnels. His work keeps him out of town most of the time.

The lining of the tunnels is considered of a highly specialized nature and every precaution is being taken by the County Works Department to follow this work with extreme caution and strict supervision.

Engineer Joseph Stastny, Secretary-Treasurer, Mid-Western Pennsylvania Chapter, Pennsylvania Society of Professional Engineers, reports—"Our Franklin meeting, despite bad weather, turned out with twenty-four members. Two new members were added to our list, now making us twenty-six strong. Others are coming along. The representation was very well distributed with engineers attending from New Castle, Sharon, Greensville, Grove City, Franklin, Oil City and Butler." (Date of meeting, Saturday, November 19th.)

The Harrisburg Chapter and Pittsburgh Chapter will sponsor an organization meeting for the Johnstown Chapter, Pennsylvania Society of Professional Engineers, at Johnstown in January. Engineer Robert Hall Craig, Editor-in-Chief, AMERICAN ENGINEER, and National Director, will be the principal speaker. Engineer Frederick H. Dechant, Vice-President, National Society of Professional Engineers, Reading, Pennsylvania; Engineer Irvin H. Geiger, President, Harrisburg Chapter, P.S.P.E., and others will be present.

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*To fill unexpired term of H. S. Mattimore.

The Publications Committee is happy to note that progress is being made in the matter of a closer alliance with the Architects, along the lines discussed in last month's editorial, which was reprinted in THE AMERICAN ENGINEER.

Thanks to Engineer Hutchinson and Architect Marlier, organizational steps have been taken as follows:

Raymond M. Marlier, President, Pennsylvania Association of Architects, has named the following architects to the joint committee of architects and engineers:

M. Edwin Green, Chairman, Harrisburg, Pennsylvania; D. K. Boyd, Philadelphia, Pennsylvania; C. C. Zantzinger, Philadelphia, Pennsylvania; R. Maurice Thimble, Pittsburgh, Pennsylvania; C. M. Stotz, Pittsburgh, Pennsylvania; H. Y. Shaug, Lancaster, Pennsylvania; Karl E. Morresion, Erie, Pennsylvania; Frederick A. Muhlenberg, Reading, Pennsylvania.

Engineer Alexander Hutchinson, President, Pennsylvania Society of Professional Engineers, has named the following engineers to the joint committee of engineers and architects.

Joseph Stastny, Chairman, Greenville, Pennsylvania; Samuel I. Sacks, Philadelphia, Pennsylvania; Edward J. Ducey, Pittsburgh, Pennsylvania; Irvin H. Geiger, Harrisburg, Pennsylvania; Clarence Pulling, Erie, Pennsylvania; W. H. Dietrich, Hazleton, Pennsylvania; C. Edwin Pidcock, Allentown, Pennsylvania; Earle M. Frankhouser, Reading, Pennsylvania.

Registration: For the purpose of facilitating the registration or license to practice professional engineering in other states, any professional engineer registered in Pennsylvania may apply for a certificate of qualification from the National Bureau of Engineer Registration. The bureau, which has been established for the convenience of engineers and of the various state registration authorities, is operated by the National Council of State Boards of Engineering Examiners, assisted by an advisory committee of representatives of national engineering societies. Applications for certificates of qualification must be made on forms furnished by the bureau and filed with the executive secretary, National Bureau of Engineering Registration, P. O. Drawer 1404, Columbia, S. C.

MEMBERSHIP

A political party whose membership comprised less than twenty percent of the voting population would be deemed impotent in its influence on public affairs. The public, as well as politicians, largely judge the potency of an organization by the length of its membership roll.

In contrast, suppose the membership is increased to forty or, say, fifty percent. The organization then becomes a strong factor.

So, too, the influence of this Society, in its efforts for the betterment of the engineering profession, is more than directly proportional to the number of its members. In other words, if the membership could be doubled the results would be not twice, but many times as great.

This Society of Professional Engineers is no longer an experiment. It has demonstrated its usefulness. It is a vital force for the good of the profession. Membership in it benefits the member and his profession equally. Wherefore, then, is the necessity of solicitation for the increase of membership?

No doubt many engineers sincerely believe they have not the time for Chapter activities; but, they should realize that having their names on the membership roll (and their dues paid up) adds materially to the influence of the Society.

It requires but the minimum of effort to become a member. The result of an application is predetermined. If the applicant is a Registered Professional Engineer his eligibility is established and no one is going to slip a black ball into the hat.

With the list of members of this Pittsburgh Chapter increased one hundred percent, the regional ratio of membership to eligibles would still be far below that of Lehigh Valley Chapter for example, and less than Mid-Western Pennsylvania Chapter's objective, which is forty percent.

The membership of this Chapter must be doubled in 1939. IT CAN BE DONE.

EARL DWIGHT COVELL

PHILADELPHIA CHAPTER

The regular monthly meeting of the Philadelphia Chapter, Pennsylvania Society of Professional Engineers was held at The Engineers' Club, December 1, preceded by a meeting of the Board of Directors at 5 o'clock and dinner at 6:30 P. M., Engineer President M. L. Conneen presided.

A note of congratulations and appreciation was sent the Pittsburgh Chapter for the financial as well as professional success of the 1938 National and State Conventions.

There was considerable discussion about proposed legislation in the State Legislature led by Engineer Samuel I. Sacks, our National Director.

A letter was ordered sent to our Governor-elect, Arthur James, calling his attention to the requirements and desirability of having technical positions filled by registered engineers. The advisability of waiting on the Governor in person was left to the discretion of the Legislative Committee.

The "Discussion about the future of our profession and the contribution of our 1938 State and National Convention" was sustained by keen interest and participation of all those present.

The January meeting is to be a joint meeting with the Philadelphia Section of the American Society of Civil Engineers, January 18, at the Engineers' Club.

HENRY F. BAMBERGER, *Secretary.*

Do You Know

(Continued from page 7)

In Pennsylvania, since 1928, the applicant is required to register and appear for personal and character examination before his county board *at the beginning of his law study,* with questionnaires filled out by himself, by his preceptor (a lawyer), and by three citizen sponsors. The preceptor must be approved by the board, and the candidate must report to him at stated intervals throughout his period of school training and subsequent apprenticeship. Before the bar examination, re-examination of the candidate and certification of his moral character by the county board are required, together with final recommendations by the preceptor.

The system of Bar Examinations under State Boards of Examiners was started in New Hampshire in 1876, and soon spread to other States, and by 1933 was established everywhere in the U. S.

The National Conference of Bar Examiners began functioning in 1934, to investigate the record and reputation of applicants for interstate practice.

In 1921 a committee of the American Bar Association, headed by Elihu Root, studied the problem of securing better qualified lawyers. The committee recommended *two years of college education before the commencement of law study.* This recommendation has now been adopted in 30 States, with more States being rapidly added to the list.

The standards of the American Bar Association now require two years of college education followed by a 3-year full-time (day) or 4-year part-time (evening) course yielding a degree from a law school on the Association's approved list.

No man is a member of the legal profession until he has been legally admitted to the profession by his State Board.

(Acknowledgement: Data abstracted from report "Professional Recognition in the Field of Law" prepared by A. D. Hinckley for the E.C.P.D. Committee on Professional Recognition.)

Registration and the Irish Engineer

(Continued from page 15)

is of interest to know that the example has been set in many countries, notably Canada, Australia, South Africa, Italy, and now in the United States. Consequently much useful information covering the actual details and clauses of the various laws, together with the likely sources of opposition and kindred matters, has been published, and should present a useful guide to those, who, in the future, may get down to the work of drafting the main headlines of a Bill.

The first, and indeed the most difficult step towards registration in this country is not drafting a Bill, but obtaining the unquestionable approval of the majority of the engineers of Ireland. If this approval were obtained it is very unlikely that a government, imbued with a national outlook, would put obstacles in the way of registration even as a public measure. In order to decide what constitutes a majority, a provisional census must be assumed of the engineers in the country whose professional status is beyond question.

Cumann na nInnealtoiri has compiled such a census, which includes all those who hold a University degree in engineering (including associates of the Royal College of Science) or who are corporate members of a chartered engineering institute. On this basis the number of engineers in the whole of Ireland was 1,492 last year. Of this number 740 held a University degree, 437 held a University degree and were also corporate members of an engineering institute, and 315 were corporate members of an engineering institute only. In the twenty-six counties the corresponding figures to the foregoing were 1,180, 661, 340 and 179 respectively. In this comparatively simple census, several chartered institutes are represented, so it may be taken that the roads leading to the profession, even in Ireland, are diverse and many.

There is, of course, no objection to a diversity of roads. What is objectionable, and what may spell trouble when approval to registration is sought, is the undeniable impression amongst some groups that others have not come by the right road. The position is further complicated by the fact that no chartered institute, and no professional organisation, embraces 28 per cent. of the engineers in the whole country, or 32 per cent. of those in the twenty-six counties. This means that no group to-day is in the position to represent numerically the majority of the engineers when a major matter like registration is in question.

This difficulty could be overcome if one or more of the most representative bodies took the initiative in consulting the whole profession by ballot on the issue of registration, and asking for a mandate to interest the Government in the introduction of a Bill. In this connection the I.C.E.I. comes to mind, as the most representative of the chartered institutes, and one which now derives its legal powers from the Government of Ireland, but it is open to question whether the promotion of registration laws comes within the ambit of its charter. Cumann na nInnealtoiri, with a rapidly increasing membership, is the next most representative group, and has the promotion of registration as its *raison d'etre* since its foundation. The writer admits being unable to comment on what part the other chartered institutes whose powers are derived from foreign countries, could play in a matter which would be the concern of the Irish Government.

Judging from the present average annual increase in the membership of the I.C.E.I. and Cumann na nInnealtoiri several years would elapse before either body would represent numerically the majority of the engineers in the twenty-six counties. This fact, however, should not prevent either body, or both jointly, *but not both separately,* from taking the initial step of consulting the profession by ballot. This simple procedure would show more clearly what the prospects of registration are likely to be, than any speculations which may be ventured upon in this, or similar discussions. It is, however, premature to take this course, until many deft writers and many accomplished orators have pleaded the case, not so much for registration which requires no advocate, but for the interest, the harmony and unity within the profession, which are the essential requirements for ultimate success.

The Engineering Profession

(Continued from page 11)

this is not exactly an attempted imitation of the organization of the National Society of Professional Engineers as it also advances the thought "of an all-comprehensive and coordinating head for the engineering profession."

Any thought that the engineers are to be coerced through their technical societies to give over their professional interests to a dictatorship is intolerable to each and every engineer and it is on this point that any imitation must fail. An organization of free and independent Americans must be democratic and that is the difference between the composition of the so-called technical groups and the strictly professional groups. The National Society of Professional Engineers, its State Societies and their local chapters, with the policy forming powers and plans for activity vested in each individual engineer who has a full and equal voice in his Chapter, State, and National matters. The Directors of the national body are direct representatives from each state body, chosen by the individual engineers themselves in chapter meetings. Assembled, these directors can advance no actions not approved by their electors. In other words instead of "an all-comprehensive head" as advocated, the N. S. P. E. has an instructed directorate of selected engineers sent by the state groups to carry on such matter of public weal or professional interest as has been prearranged by the member engineers themselves.

Technical societies are mainly militaristic or dictatorial in general form, run primarily by a paid Secretary and staff and secondarily by officers and council.

The ordinary dues paying member does not know that which is going on, and only part of what has gone on after it has gone on. He pays his dues and takes that which is handed him. If he protests, he is apt to be tossed out, if they can make it stick. ENGINEERS, is that the way you want your material interests or professional solidarity handled?

The answer is no. The issue is open, we have been attacked in many quarters. In the face of our progress in establishing unity, we must recognize the organized opposition against us even though it be undercover and full of indirection, the purpose is there to detract, deter and destroy.

Shall we let the forces of subsidized societies, subsidized publications, subsidized universities, and their subservient underlings prevent our onward progress toward an elevated, honorable unfettered and self-governing status for our profession where we may serve the safety, health, and common good of the people of our nation?

It is encumbent upon each professional engineer to join hands with his fellow engineers in his State Society and the National Society of Professional Engineers to aid in its activities and objectives and in the increase of its membership and to show that we engineers are a free and united profession, not to be classed as merely wage or salary workers. If the engineers will rally around the standard of their fraternity and firmly stand by the unity and high code of their calling, Engineering will offer to its votaries a career, not merely a privilege to be a hired skilled flunky.